Tai Wātea/Waves of Freedom: An Evaluation of a Surf Therapy Programme for High-Risk Males Residing in New Zealand

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Abstract

In recent years, surf therapy has been successfully utilised with several vulnerable populations who may not respond well to conventional therapeutic interventions, including veterans, children with physical and cognitive challenges, and marginalised young people. The Tai Wātea surf therapy programme, provided in Tauranga, New Zealand aims to improve the psychosocial functioning of disengaged, high-risk young men between ages 16 to 24. The aim of this study was to evaluate the effectiveness of the Tai Wātea programme at achieving this objective over the span of one year. A single-group pre-test post-test research design, with repeated measures and replication was utilised. Twenty-seven study participants were recruited over four programme intakes, between August 2018 and August 2019. The Youth Outcome Questionnaire Self-Report (Y-OQ-SR) was administered at pre-intervention, intervention and post-intervention time intervals in order to evaluate changes in functioning over time. The Y-OQ-SR's clinical cut-off scores and Reliable Change Index were employed to assess the clinical and statistical significance of outcomes pertaining to each individual, and effect size measures were utilised in order to estimate the magnitude of the over-all programme effect on various areas of functioning. Outcomes were presented on modified Brinley plots. Regarding over-all psychosocial functioning, results indicated that, following the intervention, 25 out of 27 participants demonstrated statistically significant improvement, 20 of which also demonstrated clinically significant improvement. Effect size measures also revealed a large treatment effect (d_{av} = -2.00; RCI+% = 92%; CLES = 97%). Specific areas of functioning in which significant improvements were observed included intrapersonal functioning (d_{av} = -1.7; RCI+% = 77%; CLES = 95%), interpersonal functioning (d_{av} = -1.7; RCI+% = 70%; CLES = 70%), social functioning (d_{av} = -1.5; RCI+% = 48%; CLES = 90%), behavioural functioning (d_{av} = -1.4; RCI+% = 33%; CLES = 89%), and clinical functioning (d_{av} = -1.3; RCI+% = 37%; CLES = 89%). These findings indicate that the Tai Wātea surf therapy programme is a highly promising and valuable therapeutic avenue for improving the psychosocial functioning of disengaged, high-risk young males residing in New Zealand.

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Abbreviations

ACEs: Adverse childhood experiences

ADHD: Attention Deficit Hyperactivity Disorder

ASD: Autism Spectrum Disorder

AT: Adventure therapy

CB-AT: Community-based adventure therapy

CBT: Cognitive-behavioural therapy

CI: Confidence Interval

CLES: Common language effect size

LFM: Live For More Charitable Trust

mBPs: Modified Brinley plots

MDD: Major Depressive Disorder

NHST: Null-hypothesis statistical testing

OELT: Outdoor experiential learning therapies

PTSD: Post-traumatic Stress Disorder

RC+%: Percentage of participants demonstrating reliable change in therapeutic direction

RCI: Reliable change index

RCT: Randomised controlled trail

SD: Standard Deviation

US: United States of America

WT: Wilderness therapy

Y-OQ-SR: Youth Outcome Questionnaire Self-Report

Y-OQ: Youth Outcome Questionnaire

Glossary

Aotearoa	New Zealand
Aroha	Love, affection, compassion
Haka	Traditional dance/challenge
Hapū	Sub-tribe
Iwi	Tribe
Kai	Food
Karakia	Prayer, chant, incantations
Mana	Prestige, authority, control, spiritual power, dignity, integrity or respect
Māori	Indigenous people of New Zealand
Moana	Sea or ocean
Oranga Tamariki	Ministry for Children
Pākeha	New Zealander of European or English descent
Pepeha	A way of introducing yourself in Māori, based on your whakapapa
Rangatahi	Youth, or the younger generation
Taonga	Treasure or anything considered to be of value
Te ao Māori	The Māori world, Māori world view
Te reo Māori	The Māori language
Tīpuna	Ancestors
Tūrangawaewae	Place where one has the right to stand, rights of residence and belonging through kinship and whakapapa
Wairua	Spirit, spiritual, soul
Whakapapa	Genealogy, lineage, descent
Whānau	Family
Whānaungatanga	A family-like connection that is developed through shared experiences, goals and values

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For Stephen,

who’s smile is greatly missed by us all.

Introduction

Across New Zealand, there is an estimated number of 89, 000 young people aged 15 to 24 who are at risk of adverse life outcomes, such as poor economic opportunity, poor education, poor mental health, and custodial or community sentencing. These outcomes are mutually-reinforcing in nature and often stem from adverse childhood experiences. Those most at risk of these outcomes are Māori males. Historical trauma through the process of colonisation and modern-day racism still act as barriers to equality in life-outcomes within New Zealand society today. In order to accurately conceptualise Aotearoa's "high-risk youth", chapter one examines these issues in detail.

High-risk young people are in need of effective therapeutic interventions. However, health professionals wanting to utilise interventions such as cognitive-behavioural therapy or motivational interviewing, may encounter several obstacles in the process of reaching and retaining this population for treatment. This includes, but is not limited to, potential clients' chaotic lifestyles, distrust in authority figures, and a negative cognitive schema surrounding "therapy". Adventure therapy approaches can overcome these barriers. Such programmes utilise challenging and attractive outdoor activities as a subtle and non-threatening vehicle for reaching, retaining, assessing and supporting young people who are not interested in or do not respond well to conventional intervention. Chapter two explores common conventional interventions utilised within this population, as well as their effectiveness. This chapter also discusses adventure therapy programming and its effectiveness, its theoretical underpinnings, and the unique therapeutic features that make it highly relevant to and feasible for supporting high-risk young people in New Zealand.

The utilisation of surfing as an outdoor therapeutic tool has grown exponentially over recent years. Its effectiveness has now been researched within several vulnerable populations, including veterans, foster children, physically and cognitively challenged children, adults struggling with addiction, and marginalised young people. Chapter three describes the history of surfing and said history's relevance to employing surf therapy with Polynesian youth residing in New Zealand. The chapter then describes the unique therapeutic qualities inherent in surfing, provides a review of surf therapy literature as it currently stands, and posits surf therapy as a form of community-based adventure therapy. The chapter concludes by detailing surf therapy programming within New Zealand.

Tai Wātea is an eight-week surf therapy programme currently being provided by the Live For More Charitable Trust in Tauranga, Bay of Plenty. The programme is designed to reach and support high-risk young men in overcoming the statistics associated with their population and to discontinue the generational cycles of dysfunction within their families, through positive community and the improvement of their psychosocial functioning. Chapter four describes the main components and theoretical underpinnings of the Tai Wātea programme and concludes with the current study's specific research focus.

Despite the surge of academic and social interest in surf therapy over the last ten years, research on the effects of surf therapy within New Zealand is yet to be conducted. Research on the unique benefits of utilising surf therapy with Polynesian populations, such as Māori, is also non-existent. In light of this, the aim of the current study was to evaluate how effective the Tai Wātea programme is at improving the psychosocial functioning of its participants. External evaluation of interventions, whether conventional or novel, is highly valuable, as it assists health professionals in better serving their communities and the vulnerable young people residing within them. Chapter five describes the study's research design,

participant characteristics, measurement tools, procedures, and data analysis method, as well as important ethical considerations pertaining to the study.

Chapter six then provides an account of the research outcomes as they relate to the study hypotheses, including programme effects on overall psychosocial functioning, specific areas of functioning, and the direction and degree of change in the dependent variables over time. Results are presented on modified Brinley plots in order to demonstrate the clinical and statistical significance of outcomes pertaining to each participant, as well as the magnitude of the over-all programme effects, as expressed by effect sizes.

Following on from this, chapter seven aims to discuss the results of the study in light of the specific context and population, as well as relevant community-based adventure therapy and surf therapy research. The chapter concludes with a discussion on programme-specific recommendations, the implications of the research findings, study limitations, and future research directions.

Chapter One

Conceptualising Aotearoa's High-risk Population

Introduction

This chapter will centre on the conceptualisation of New Zealand's high-risk population. The chapter will begin by detailing "who" these young people are, the specific outcomes that they are 'at risk' of experiencing, and the types of individuals that are at highest risk of these outcomes. This will be followed by an exploration of ways in which these outcomes can become mutually-reinforcing and how this can create complex issues that may require long-term and multi-faceted care. A deliberation on how these outcomes may be understood within the framework of adverse childhood experiences and early trauma will follow. Due to indigenous males being over-represented in these adverse life outcomes, the chapter will conclude with an examination of the socio-political factors that impact upon these inequalities.

Defining 'High-risk Youth'

Across New Zealand, there is an estimated number of 87,250 young people aged 15 to 24 who are at risk of poor long-term outcomes (Ball et al., 2016; Crichton et al., 2015). These adverse outcomes, as described by the New Zealand Treasury, include poor economic opportunity — indicative of receiving a benefit for more than five years between ages 25 and 34; poor education — indicative of not achieving NCEA level 2 or a level 4 qualification by age 23; poor health — indicative of using mental health or addiction services by ages 20 to 22; and poor safety and security — indicative of receiving a custodial or community sentence between ages 25 and 35. Projected costs associated with this

population is a minimum of $180,000 and a maximum of $410,000 per individual per year, depending on their risk category (moderate, high, extreme). This estimation includes the cost of community and custodial sentencing, Oranga Tamariki and community mental health/addiction services, and persons receiving income support from Work and Income New Zealand (Crichton et al., 2015).

The risk factors associated with the above outcomes vary depending on the age of the individual as well as the specific outcome category (Ball et al., 2016). As it is of most relevance to the current study, the risk factors associated with each of the four outcome categories for a 15-year-old individual, are displayed in Table 1.

These risk factors suggest that at-risk youth often grown up in dysfunctional and impoverished households, have not completed secondary education, have

Table 1

Poor long-term outcome categories and their associated risk factors for 15-year-old youth

Poor Economic Opportunity	Poor Education	Poor Safety and Security	Poor Health
Contact with Oranga Tamariki	Contact with Oranga Tamariki	Contact with Oranga Tamariki	Contact with Oranga Tamariki
Ethnicity	Low school decile	Ethnicity	Ethnicity
Caregiver benefit receipt and low qualification	Long time on benefit as child	Caregiver has served correctional sentence	Caregiver benefit receipt and low qualification
Long time on benefit as child	Stood Down from School	Stood Down from School	Stood Down from School
Receiving special education services	Receiving special education services	Referred to Youth Justice	Indicators of mental illness

come into contact with the Justice System, are struggling to achieve mental and

emotional well-being, and commonly identify as Māori. Other risk factors include homelessness, having teenage parents, parental gang-involvement, and involvement with anti-social peers. The more of these risk factors are present in a young person's life, the more likely they are to experience one or more of the fore-mentioned outcomes; and unfortunately, merely the presence of one risk factor increases the likelihood that other risk factors will also be present (Ball et al., 2016; Crichton et al., 2015). It should also be noted that, in comparison to other 15 to 20 year olds, youth who identify as Māori ***and*** male are at highest risk of experiencing one or more of these outcomes by the time they are 32 years of age (Ball et al., 2016).

In summary, based on the administrative data supplied by the New Zealand Treasury, the term "high-risk youth" may be understood as a population of young people who present with the above mentioned risk factors, and are consequently at an elevated risk of poor long-term educational, economic, health and social outcomes by the time they become adults.

A Population with Complex Needs

Due to the above risk factors often impacting on more than one outcome category at a time (e.g. contact with Oranga Tamariki is associated with all four adverse outcomes), poor outcomes can develop together. This has reportedly been the case in regard to substance misuse, mental illness and offending (Bennett & Holloway, 2005; Phillips, 2000). For example, in New Zealand it is estimated that 60% of community-sentenced offenders (typically youth) have co-occurring problems with mental health and substance use (Ministry of Justice, 2018). Additionally, a New Zealand based study, investigating the prevalence of co-occurring mental health and substance use disorders in a sample of 1209

prisoners from 13 prisons, found that 91% of inmates had received a life-time diagnosis of a mental health or substance abuse disorder (Indig et al., 2016). Understanding how these problems mutually-reinforce each other is vital in the providence of effective, relevant intervention (Lambie & Gluckman, 2018). A brief description of how these issues relate to each other, theoretically and practically, will be briefly outlined below.

Poor mental health and substance misuse. The relationship between mental distress/illness and substance misuse has been well documented (Beam et al., 2002; Boden & Fergusson, 2011; Degenhardt et al., 2018; Dixon & Lehman, 2017; Tonmyr et al., 2010). Firstly, Fang and McNeil (2017) have stated that without adequate support systems and positive coping strategies, young people are not equipped to deal effectively with distressing events inside or outside of their homes. When this is the case, early substance use, as a convenient and pleasurable form of escape from negative emotions and distressing memories is likely to occur (Fang & McNeil, 2017; Futa et al., 2003; Hovdestad et al., 2011; Whitesell et al., 2009; Wright et al., 2013). In the context of growing up amidst household dysfunction and neighbourhood deprivation, where drug and alcohol misuse, delinquent peers and a lack of parental supervision is common, substances are more easily accessible (Crum et al., 1996; Sartor et al., 2018). Unfortunately, repeated use of alcohol and other drugs as a means of coping with distressing circumstances and traumatic memories, may subsequently increase the risk of substance use disorders, mood disorders, and drug-induced psychosis in early adulthood (Arseneault et al., 2002; Kirsch et al., 2020; Tonmyr et al., 2010; Wolitzky-Taylor et al., 2017). If positive coping strategies and treatment for early trauma is not provided, a cycle of ever-increasing substance

use and mental illness may then transpire (Ehlers et al., 2019; Dixon & Lehman, 2017; Mersky et al., 2013).

Poor mental health, substance misuse and correctional sentencing. Research suggests that substance misuse and mental illness, independently, may in turn increase the likelihood of a person engaging in law-breaking behaviour (Baillargeon et al., 2009; Bennett et al., 2008; Boden et al., 2013; Gottfried & Christopher, 2017). Persons who have been diagnosed with both a mental health disorder and a substance use disorder, are at a considerably higher risk of first-time offending and re-offending (Baillargeon et al., 2010; Hartwell, 2004; Lambie & Gluckman, 2018; Sacks et al., 2009; Shook et al., 2011; Zettler, 2018). A dually diagnosed person may have more difficulty managing emotions, making rational decisions, calculating risk verses reward in behavioural choices, and maintaining stable employment in order to finance an addiction (Hayhurst et al., 2017; Pierce et al., 2017), and are therefore more likely to become justice involved. Bennett and Holloway (2005) also argue that problematic drug use and criminality may be viewed as overlapping lifestyles that share similar behavioural and cognitive traits; even more so when young people are involved in gangs (Lambie & Gluckman, 2018).

A considerable percentage of high-risk youth, especially those involved in Youth Justice at an early age, have grown up around gang members and gang activity (Ball et al, 2016; Miller & Barnes, 2015; Turney, 2018) and often, these young people naturally become involved in gangs through family members (Lambie & Gluckman, 2018). Other individuals may simply gravitate toward gangs through their peers, as it initially meets their need for camaraderie, structure, status, material goods, protection, acceptance and a sense of belonging that may have eluded them within their own households as well as

within mainstream society (Tamatea, 2015; Radak, 2016). This is understandable, but highly problematic. Although gang involvement can meet essential developmental needs, gang members frequently model substance abuse, lawlessness, violence and anti-social attitudes (Winfree et al., 1994). In addition, gang membership encourages new members' rejection of pro-social institutions, behaviours, and processes — progressively isolating them further from mainstream society (Pyrooz et al., 2013; Tamatea, 2015). Unsurprisingly then, gang involvement can make desistance from crime much harder for young people (O'Brien et al., 2013; Sweeten et al., 2013), and is a known risk factor for life-time criminal persistence (Pyrooz, 2014), and drug-related crime (Bjerregaard, 2010).

Unfortunately, correctional sentencing can have severely negative and cyclical effects on some juvenile offenders, especially on those who have dysfunctional or traumatic family histories (Clements-Nolle & Waddington, 2019). Reported outcomes include re-traumatisation, a worsening of depression and anxiety, exposure to more anti-social networks, an increase in suicidal behaviour and ideation and an increase in substance use (Johnson, 2017; Lambie & Randell, 2013; Stokes et al., 2015).

Poor life opportunity. Following on from this, a dual diagnoses or a triple stigma ('criminal', 'mentally ill' and 'addict'), can make furthering one's education, gaining legal employment, and the ability to obtain secure housing more difficult (Abrams, 2006). Practical challenges in actuating a pro-social life, in combination with a lack of life skills (Logan-Greene et al., 2017; Lowe et al., 2013; Maisto et al., 2000) and a predominantly anti-social network (Martinez & Abrams, 2013), can prove to be disheartening (Calhoun, 2018; Lambie & Gluckman, 2018). It is then unsurprising that many individuals in recovery, rehabilitation, or reintegration fall

back on drug use as a reliable manner of coping with distress and drug trading as a familiar and reliable source of income (Abrams, 2006; Inderbitzin, 2009; Shook et al., 2011). For some, re-arrest and relapse seem imminent (Sánchez et al., 2020; Harrison, 2001). This cycle can to keep high-risk youth and their families locked into poverty and poor life opportunity (poor education and poor economic opportunity) for generations (Harper et al., 2003; Metzler et al., 2017; Sansone et al., 2012).

Problematic cycles. Understanding the negative, cyclical, and mutually-reinforcing relationships between substance misuse, mental illness, correctional sentencing, and poor life opportunity is vital in the conceptualisation of this population (Figure 1), as it reveals the need for interventions that can address all

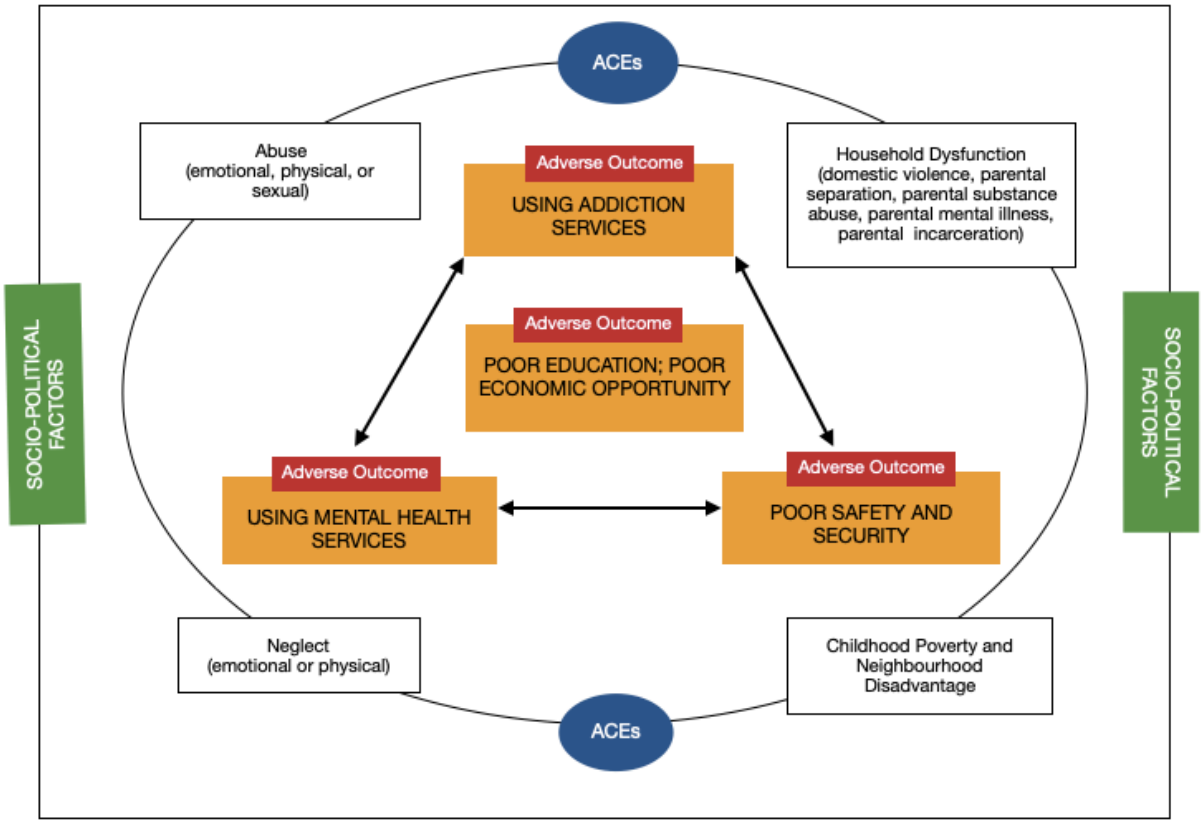


Figure 1. A conceptualisation of high-risk youth in Aotearoa, New Zealand.

of

these issues simultaneously (Jackson et al., 2012; Johns et al., 2017; Knight et al., 2017; Knight et al., 2018; McNiel et al., 2005) — ideally within the context of long-term, emotionally supportive environments (Merrick et al., 2013; Woods-Jaeger et al., 2018; Thornberry et al., 2013). It is important to recognise that without effective treatment, these issues become increasingly difficult to manage, and may lead to homelessness (Dawson et al., 2020; Edalati et al., 2017; Greenberg & Rosenheck, 2008), premature mortality (Brown et al., 2009; Håkansson & Jesionowska, 2018; Rod et al., 2020), and intergenerational cycles of maltreatment (Thornberry & Henry, 2013; Thornberry et al., 2012), criminality (Gifford et al., 2015; Besemer et al., 2017) and poverty (Currie & Spatz-Widom, 2010; Harper et al., 2003; Metzler et al., 2017).

Adverse Childhood Experiences

According to Ecological Systems theory, a person's life-course development, positive or negative, must be framed within their wider environmental context (Bronfenbrenner, 1992). The World Health Organisation (Siddiqi et al., 2007) and the Ministry of Justice (Lambie & Gluckman, 2018) both recognise the strong empirical evidence that many issues presenting in adolescence and adulthood have roots in early childhood trauma. Harmful events that take place within a family environment before the age 18, and lead to the disruption of a person's physical or psychological health and development are described in the literature as 'adverse childhood experiences' (ACEs; Kalmakis & Chandler, 2014). The known association between ACEs and poor outcomes is well-documented (Chang et al., 2019; Liming & Grube, 2019). Common childhood experiences that predict a high prevalence of poor outcomes in adolescence and adulthood are: 1) physical abuse, 2) emotional abuse, 3) sexual

abuse, 4) physical neglect, 5) emotional neglect, 6) parental substance abuse, 7) parental mental illness, 8) parental incarceration 9) witnessing domestic violence, and 10) parental separation (Felitti et al. 1998). Recent publications have argued that childhood poverty and adverse neighbourhood factors (e.g. community violence) should be added to the inventory of ACEs (Finkelhor et al., 2015). As with the risk factors described by the New Zealand Treasury, ACEs do not typically occur independently, and their presence has a cumulative effect on health (Baglivio & Epps, 2015; Crouch et al., 2017). The presence of ACEs in a young person's life is considered as a pertinent part of their micro- system (Bronfenbrenner, 1992; Verrecchia et al., 2010). Scholars within New Zealand and Australia have strongly argued that in order to improve well-being and mental health in the general population, prevention and treatment of ACEs need to be a fore-most priority of all health professionals within their sphere of influence (Jorm & Mulder, 2018).

The impact that harmful childhood environments have on later life is exemplified by the association between contact with Oranga Tamariki and all four adverse outcome categories described by the New Zealand Treasury. When Oranga Tamariki are involved within a family, it is likely because one or more of the above mentioned issues are occurring within a household (Oranga Tamariki, 2018). In light of this, the experience of early childhood trauma is highly relevant to the ecological conceptualisation of high-risk youth in New Zealand (Figure 1). Research linking ACEs to the adverse outcome categories described by the New Zealand Treasury (i.e. poor education, poor economic opportunity, poor health and poor safety and security) will be briefly outlined below.

Poor education and economic opportunity. Education, employment and income play a vital part in life opportunity, quality of life, and achieving one's "full

human potential" (Metzler et al., 2017, p. 146). Home environments that are unsafe or stressful can impair a child's ability to learn and practice adaptive emotional, cognitive, and behavioural skills that are required to succeed in educational and work settings (Currie & Spatz-Widom, 2010; Dutro & Bien, 2014; Hurt et al., 2001; Porche et al., 2016). For example, Bethell and colleagues (2014) surveyed 95,677 children and found that those who experienced two or more ACEs were more than twice as likely than the control group to repeat a grade or disengage from school completely. In addition, Kiesel and associates (2016) conducted a longitudinal study on the association between maltreatment, domestic abuse and academic performance in 2,914 children. They found that children who reported these ACEs significantly underperformed in school, in comparison to children who had not been exposed to maltreatment and violence. Hunt et al. (2017) also recently noted a relationship between the number of ACEs a child has encountered and an increase in learning and behavioural problems. These findings are consistent with other research linking ACEs to elevated rates of academic failure (Clark et al., 2010; Fantuzzo et al., 2011; Jimenez et al., 2016; Thompson & Whimper, 2010), IQ suppression (Delaney-Black et al., 2002; Koenen et al., 2003), leaving school early (Morrow & Villodas, 2018), and a lower socio-economic status in adulthood (Covey et al., 2013; Sansone et al., 2012).

The link between ACE exposure and low educational achievement has been partly explained by poverty and family stress (Jensen et al., 2017), an over-activation of the body's stress response (Sheridan & McLaughlin, 2016; Spann et al., 2012) and the damage this exacts on brain structures such as the hippocampus, the prefrontal cortex, and the amygdala (Nelson & Gabard-Durnam, 2020; Teicher et al., 2016), Post-traumatic Stress Disorder (PTSD; Burns et al., 2010; Kalmakis et al., 2020), and a lack of parental support with school-

related activities such as homework and other projects (Kasehagen et al., 2018; Claessens et al., 2015; Nichols & Loper, 2012; Tan et al., 2017; Turney & Haskins, 2014).

Poor safety and security. The Ministry of Justice (2018) recently stated that there are "complex problems" (p. 5) that underlie young people's offending, further explaining that 97% of males and 100% of females involved in Youth Justice are known to Oranga Tamariki. Studies outside of New Zealand have consistently reported that rates of ACE exposure are highly correlated with delinquent, aggressive and anti-social behaviour (Baglivio et al., 2015b; Baglivio et al., 2014; Dierkhising et al., 2013), rates of reoffending (Wolff et al., 2015), and criminal persistence in adulthood (Basto-Pereira et al, 2016; Craig et al., 2017; Edalati et al., 2017; Fox et al., 2015). For example, Baglivio and Epps (2015) recently investigated the inter-relatedness of ACEs in 64,329 high-risk juvenile offenders. Similar to the numbers reported by the Ministry of Justice (2018), they found that only three percent of males and only two percent of females reported no exposure to any abuse or neglect. They also found that 47% of males, and 62% of females in their sample experienced four or more ACEs. High levels of ACE exposure among offending populations have lead some authors to argue that young offenders are not "kid criminals" (Johnson, 2017, p. 80), but traumatised children who lack the practical and emotional support, self-efficacy, and life skills to reach their potential as functioning members of society (Bridgett et al., 2015; Cuevas et al., 2017; Logan-Greene et al., 2017).

It has been argued that the relationship between ACEs and crime may be due to the combination of a deficiency in pro-social relationships and perspectives in the lives of such young people (Neely & Griffin-Williams, 2013; Simons & Burt, 2011) and early exposure to predominantly anti-social modelling

and networks (Johns et al., 2017; McCrystal et al., 2007), as well as stress and poverty (Harper et al., 2003), neurobiological factors (Meier et al., 2012; Shin, et al., 2016) and the mutually-reinforcing relationships between trauma, mental illness, substance misuse, and offending (Bennett & Holloway, 2005; Lambie & Gluckman, 2018).

Poor health. Researchers have demonstrated that the presence of ACEs in an individual's childhood is associated with higher rates of negative physical and health outcomes in later life (Herzog & Schmahl, 2018; Raposo et al., 2014). Adults and young adults who experienced high rates of ACEs in early life are more likely to report medical conditions such as insomnia (Bader et al., 2007), obesity (Greenfield & Marks 2009), diabetes, heart disease, liver disease (Felliti et al., 1998) and lung cancer (Brown et al., 2010). Scholars have also found a graded relationship between ACEs and later experiences of somatic complaints (Herzog & Schmahl, 2018; Lin et al., 2020; Sachs-Ericsson et al., 2017), psychiatric disorders (McGrath et al., 2017; Putnam et al., 2013), personality disorders (Afifi et al., 2011), mood disorders (Gardner et al., 2019), suicidal behaviour (Choi et al., 2017; Ports et al., 2017; Thompson et al., 2019), decreased emotional well-being (Balistreri & Alvira-Hammond, 2016; Spinazzola et al., 2014) and Attention Deficit Hyperactivity Disorder (ADHD; Brown et al., 2017). There is also a strong relationship between ACE exposure and excessive use of substances, such as alcohol (Fang & McNeil, 2017; Tonmyr et al., 2010), tobacco (Alcalá et al., 2016) and other illicit drugs (Gomez et al., 2018), as well as risky sexual behaviours (Hahm et al., 2010; Hillis et al., 2000).

The relationship between ACEs and negative health outcomes are thought to be due to untreated PTSD (De Bellis et al., 2009), neurobiological factors such as hypothalamic-pituitary-adrenal axis dysfunction and the impact of this on one's

immune system (Coates, 2010; Sheridan & McLaughlin, 2016; Herzog & Schmahl, 2018), as well as social and emotional factors such as easier access to alcohol and drugs, lack of parental supervision, emotional dysregulation, maladaptive emotional and cognitive schemas, feelings of shame, guilt and worthlessness, and insecure attachment styles (Christ et al., 2019; Coates, 2010; Jaworska-Andryszewska & Rybakowski, 2019; Sedighimornani et al., 2020; Wojciket al., 2019; Zeynel & Uzer, 2020).

Socio-political Considerations

There are clear socio-political issues that need to be considered in the conceptualisation of high-risk youth in the context of Aotearoa: 'ethnicity' was strongly associated with three out of four poor outcome categories with Māori males being most likely to fall within the highest risk brackets outlined by the Treasury (Crichton et al., 2015). Adding to this, Māori are also overrepresented in statistics regarding domestic violence (Herbert & Mackenzie, 2014), various trauma profiles (Hirini et al., 2005; Flett et al., 2004), and child poverty (Bécares et al., 2013; Duncanson et al., 2018). Scholars within New Zealand have argued that these disparities are due to strong socio-political undertows (Poata-Smith, 2013; Reid et al., 2014), such as historical trauma as a result of colonisation and present day racism. Such macro-level influences (Bronfenbrenner, 1992) are a definitive part of conceptualising high-risk youth in Aotearoa (Figure 1).

Historical trauma. Native American scholars were among the first to argue that chronic, complex and collective trauma resulting from colonisation, can cause a "spiritual injury", "soul sickness", or "ancestral hurt" (Duran, 2006, p. 15) at the core of indigenous communities (Brave Heart & DeBruyn, 1998; Duran & Duran, 1995; Pokhrel & Herzog, 2014; Walters et al., 2011; Whitbeck et al., 2004).

A key feature of this phenomenon is a grief that remains unresolved because it is denied, unacknowledged, and/or disenfranchised — unlike the grief of communities that have endured trauma and persecution through war (Lawson-Te Aho, 2014). Heart (2003) defined indigenous experiences of historical trauma as "cumulative emotional and psychological wounding over the lifespan and across generations, emanating from massive group trauma experiences" (p. 7). Trauma responses can include rebellion, suicidal gestures, depression, anxiety, low self-esteem, anger, self-destructive behaviour, and substance abuse — often in an attempt to avoid feelings of hopelessness, injustice and rage (Heart, 2003). According to Duran (2006), unresolved trauma and its accompanying dysfunctional behaviours are unintentionally passed down to the next generation, as it influences children's living and learning environments. This process stokes the cycle of intergenerational trauma (Lambie & Gluckman, 2018; Pihama et al., 2014).

Historical trauma in Aotearoa. Land wars, land confiscation, religious conversion, and legislation that suppressed indigenous language, culture and social practices are specified by Wirihana and Smith (2014) as the traumatic events that still mark the lives of Māori communities today. The New Zealand Land Wars, resulting from disputes over the indigenous and English interpretations of the Treaty of Waitangi, inter alia, (Keenan, 2009; Keenan, 2012) led to "multiple episodes of mass murder of Māori men, women and children" (Dalton, 1967, p. 199), as well as "a great deal of brutality, much burning of undefended villages and indiscriminate looting…" (Dalton, 1967, p. 241). Māori resistance to British political and economic domination was met with punishment by means of the New Zealand Settlements Act, which saw 3 million acres of Māori land being transferred to British settlers in 1863 (Belich, 1998). The ensuing loss of life,

security and livelihood led to severe impoverishment, Māori depopulation (Walker, 2004), “cultural genocide” (Marsden & Royal, 2003, p. 88), the fragmentation of entire communities, and changes in the structure and function of the family unit (Wirihana, & Smith, 2014). It is important to note here that Māori whānau (family) violence was not acceptable nor common in traditional Māori society. As Walters and Seymour (2017) explain,

> “The role of women and children was one of divinity and sanctity where the status of women, Mana Wāhine, was an essential part of spiritual, emotional and cultural wellbeing for whānau, hapū and iwi. The mana [dignity] of women was related to her place as te whare tangata, the carrier of future generations, while children also had their own mana and were viewed as taonga [treasures]” (p. 80).

However, the urbanisation of Māori, collective trauma, access to substances which could aid in numbing the effects of trauma, and colonial views on physical discipline and male superiority, all contributed to more frequent cases of whānau dysfunction in post-colonial society (Jenkins & Harte, 2011; Pihama et al., 2003).

Māori epistemologies also soon became suppressed by Pākeha (foreigner) epistemologies, some by means of legislation. Early Christian missionaries were tasked with ‘civilising’ Māori and inevitably converted entire tribal regions to Christianity (Walker, 2016). The loss of land with which Māori have an inherent spiritual (as opposed to economic) relationship, in addition to the indoctrination of a foreign spirituality may have resulted in what some would call a great “loss of spirit, the destruction of self, [and] of the soul” (Atkinson, 2013, p. 69). Additionally, the Tohunga Suppression Act, enforced in 1907, restricted the application of traditional Māori medicine and healers in favour of British practices, which further marginalised Māori knowledge and silenced indigenous voices

regarding their own health and well-being (Durie, 1985; Hokowhitu, 2007). Lastly, a mandate requiring that English be the sole language used in the education of all children above pre-school age was put into action through the Native School Code in 1880 (Walker, 2016). Conversing in Māori on school grounds would thus be met with corporal punishment, resulting in feelings of cultural shame and a decline in te reo Māori (the Māori language; Wirihana, 2012).

Māori were also denied educational and occupational autonomy (Walker, 2016). Despite the achievements of Māori students in science, math and literature (Hokowhitu, 2004), Māori schools were required to emphasise English studies and technical subjects, and to abandon all 'academic' subjects through legislation by 1913 (Barrington, 1988). Some scholars believe that the underlying objective was to marginalise Māori as the labouring underclass, who would build Britain's new Pacific paradise (Hokowhitu, 2004; Walker, 2016). While British males enjoyed a range of occupational options, almost 90% of Māori men were employed as farmers, foresters, labourers, transport operators, factory workers, or in other skilled and unskilled occupations in the year 1965 (Hokowhitu, 2004). Educational streaming through the administration of intelligence tests based on "the cultural capital of Pākehā" (Hokowhitu, 2004, p. 268), further restricted Māori to blue-collar employment. These decisions still have effects on New Zealand society today; the least of which is the racist but common belief that Māori 'simply aren't academically minded' (Hokowhitu, 2003; McCreanor, 1993; Webber et al., 2013). This belief, especially when internalised by rangatahi (Māori youth), places an invisible but firm lid over the lives of young people with great potential. Māori still tend to be employed in semi-skilled and lower income occupations (Houkamau et al., 2017).

Implications. The trauma of colonisation is still alive in the psyche of many older Māori today (Wirihana & Smith, 2014), and the profuse loss of language, culture, land, economic stability, and socio-political autonomy has greatly eroded Māori cultural pride, damaged the stable and nurturing environments required for child rearing and has ultimately lead to systemic racism that perpetuates inequalities in social, health and economic outcomes (Lambie & Gluckman, 2018; Lawson-Te Aho, 2014; Lawson-Te Aho, 2017; Lawson-Te & Liu, 2010; Marie et al., 2014; Pihama et al., 2017; Wirihana & Smith). In light of this, Farrelly and associates (2005) have strongly argued that Māori overrepresentation in suicide rates, trauma profiles, family violence, poor health, poor education, and correctional sentencing are mere symptoms of "the trauma of colonisation transmitted, as trauma often is, through generations" (p. 203).

Health professionals and organisations working with high-risk youth cannot be naive to the issue of historical trauma and its intergenerational effects. Instead, it must be considered as part of the lived experience of many, if not all, high-risk Māori young people. It must also be understood that "breaking the cycle" (e.g. of crime or poverty) within a family may mean that the young person will be standing completely alone in pursuing a new lifestyle (Lambie & Gluckman, 2018). These young people need to be constantly connected to their cultural roots (Houkamau & Sibley, 2011), as well as positive peers, positive activities and strong mentors, who foster health-seeking behaviour (Dingle et al., 2015; Lambie & Gluckman, 2018; Thornberry et al., 2013; Ungar & Teram, 2000; Woods-Jaeger et al., 2018).

Modern racism. Blatant racism, prejudice and stereotyping is still prevalent in New Zealand society today (Brittain & Tuffin, 2017; Moewaka-Barnes et al., 2013; Nairn, 2020; Pack et al., 2015a; Pack et al., 2015b; Pack et al., 2016) and is said to be perpetuated by a racist discourse that may not appear to be damaging

at face value (Houkamau et al., 2017; Wetherell & Potter, 1992), but can have detrimental effects (conscious and subconscious) on the self-concept of young Māori. The following section briefly describes the way discourse is used to perpetuate racism in New Zealand today, as well as its implications for high-risk Māori males.

Racist discourse. In Aotearoa, racist discourse is anchored in the historical context discussed above (Satherley & Sibley, 2018). It is framed by European values of individuality, racelessness, and egalitarianism (Nairn, 2020; Tuffin, 2008; Wetherell & Potter, 1992; Husband, 2012) and it is subtly generated and re-generated through everyday language (Tuffin, 2013), as well as indigenous representations in the media (Abel, 2013; Gregory et al., 2011; Johns & McCosker, 2014; Moewaka-Barnes et al., 2013; Nairn et al., 2011; Nairn, 2020).

The most prevalent and standard narrative in Aotearoa is the construction of New Zealand as a nation that is free of systemic racism and champions equal opportunity (Nairn & McCreanor, 1991; McCreanor, 1993; Satherley & Sibley, 2018; Sibley et al., 2008). In light of this ideology, past injustices are perhaps acknowledged, but they are viewed as irrelevant to the disparities between New Zealand European and Māori families in modern society (Satherley & Sibley, 2018). Consequently, legislation aiming to protect and foster positive life outcomes for young Māori (e.g. study scholarships, political representation and land redistribution) is often perceived as discriminatory toward other New Zealanders (Kirkwood et al., 2005; Moewaka-Barnes et al., 2013; Ward & Liu, 2012).

While many New Zealanders believe that race-based in-group and out-group ideologies and resulting cultural shame are no longer of concern within New Zealand society at this current time, the recent Human Rights Commission's

"Give Nothing to Racism" campaign (2019/2020) suggest otherwise. In fact, responses to the campaign only served to reiterate this social issue. For example, in her thematic analysis of social media responses to the campaign, Nairn (2020) discovered the exact same problematic discourse as previously outlined: that racism was non-existent in New Zealand, that everyone is completely equal, and that the campaign was only serving to discriminate toward 'white New Zealanders'.

Implications for Māori youth. This ideology can have significant effects on the self-concept, experiences and worldview of rangatahi Māori today. Firstly, this discourse renders any person who does not reach their potential within this society, at this time, as solely responsible for their inability to succeed (Simons & Burt, 2011). This is not only incredibly defeating (Abramson et al., 1978), but untrue: as discussed, all children do not start life with equal opportunity, security, and support and these early disadvantages clearly make a substantial and enduring difference in adolescence and emerging adulthood (Lambie & Gluckman, 2018; Sachs-Ericsson et al., 2016).

Secondly, many studies have found that racial prejudice and stereotyping can result in strong feelings of anger, anxiety, hopelessness and shame (Pack et al., 2015a; Pack et al., 2016; Tuffin, 2013). In one particular qualitative study conducted by Moewaka-Barnes and colleagues (2013), Māori described their lived experiences of racism as physical (e.g. anxiously gripping the steering wheel when passing a police car), emotional (e.g. experiencing anger, anxiety and self-doubt) and behavioural (e.g. purposefully adopting counter-stereotypical practices such as wearing glasses to look studious).

Thirdly, and as a consequence of systemic, social, and interpersonal racism, negative messages and stereotypes about one's own culture can become

internalised, having detrimental effects on a young person's sense of well-being, self-esteem, and even decision-making (Molina & James, 2016; Houkamau, 2010; Webber et al., 2013). One participant from Moewaka-Barnes et al.'s (2013) study exemplified the internalisation of Māori as "bad", by the time that she was five years of age:

> "I mean I chose to be white growing up, I really did, I made a conscious effort that I was white and then went to school and got called a nigger. At 5 years old tried to paint myself white because I wanted to be white as everybody else at my school …You know the only way that I could be Māori was to be naughty." (pp. 68-69).

Due to the early internalisation of this racist ideology, the participant felt a sense of shame around her own cultural identity. Tragically, these painful feelings of humiliation and distress translated into a determination to be classed as Pākehā, and even manifested itself in an attempt to paint over her own skin.

Implications for Māori males. Following on from this, Hokowhitu (2003; 2004; 2007) has argued extensively that Māori males, in particular, have been burdened by a harmful social construction around their own masculinity. According to Hokowhitu (2003; 2004), the dominant discourse, from the 18th century, has attempted to locate Māori masculinity exclusively within the physical realm. Over the last 30 years, the news, movies, TV series, and social media have frequently depicted indigenous men as aggressive, anti-social, simple-minded and opposed to that which is intellectual or progressive (Hokowhitu 2004; 2007; McCreanor, 1993; Tuffin, 2008). Undetected by the average New Zealander, perhaps even Māori, **"**the hyper-physical Māori male" caricature is still being continually reinforced through predominant images and discourses of the Māori

sportsman, manual labourer, warrior, or the violent offender. Alternatively, images of the Māori academic, composer, writer, and filmmaker, still remain rare — despite there being many inspiring men in these fields (Hokowhitu, 2007). The effects of a discourse that privileges the "hyper-physical" image of Māori masculinity has highly concerning social implications for all New Zealanders (Brittain & Tuffin, 2017). This can be demonstrated through an interview excerpt from a young male participant in Moewaka-Barnes et al.'s (2013) study:

> "Well we probably mentally think "Oh well that's us" then, the average fulla must think "Oh well must be true then, I must be a ratchet fulla then" ... next time they are in that moment of rage they are just gonna do whatever they do ... because that is what we are, must be what we are ... if they going to keep writing bad things about us then we are gonna be bad because we feel like we are meant to be bad ... [we were] buying into that stereotype because at that time the media did say hey it still was going on about heaps of Māoris in prison, heaps of Māori committing all the crimes so that is going to be the result? Is that we are going to start thinking like that, so even nowadays when that Māori goes up to rob something and he thinks "Fuck should I or shouldn't I?", "Nah fuck it Māoris are meant to be in jail anyway" whereas if it was on the positive side it would be "Shall I smash this window?", "Nah fuck we are Māori, we are trying to be positive", and put it down and not get into trouble and that is the difference that the media could portray and create you know?" (p. 67)

The above excerpt demonstrates how the internalisation of the message 'Māori males are predominantly trouble/bad/anti-social' can impact on a person's self-concept, and in turn, their decision making. Unfortunately, according

to Hokowhitu (2003), the subtle but powerful "'uneducated savage' trope ... is where many [indigenous] men locate themselves, are located to, and struggle to break free from" (p. 204).

When high-risk Māori males, many of whom come from a background of generational trauma, are held inside this narrative, the individual's unique story, environment and needs are neutralised and exchanged for an unhelpful ideology that posits the problem as mainly personal or cultural, rather than social or political. This is problematic for two reasons. Firstly, it distracts from the systemic and societal issues that must be remedied, especially within the spheres of mental health and the justice system (e.g. Brittain & Tuffin, 2017; Cavney & Friedman, 2018). Secondly, it places young indigenous men with immeasurable potential and talent in a limited reality, with a limited set of ideas concerning the type of identity or future that is available to them (e.g. Markus & Nurius, 1986; Simons & Burt, 2011).

Health professionals must not underestimate the influence of racist discourse — much of which may have become internalised by the time a person reaches adolescence or adulthood. Provided that pervasive stereotypes can act to normalise negative role fulfilment in society (Hokowhitu, 2007), health professionals should strive to recognise and challenge the negative or limiting views young people have of themselves or their culture, empower them to recognise and rise above these beliefs, and affirm an accurate view of their strengths and unique place within society (Lambie & Gluckman, 2018).

Conclusion

In conclusion, "high-risk youth" in the context of Aotearoa, may be understood as a population of young people that are typically presenting with

substance abuse and mental health issues, are disengaged from work or schooling, have come in contact with Oranga Tamariki and/or Youth Justice, and may be involved with gangs. These factors put them at a higher risk of adverse educational, economic, health and social outcomes by the time they become adults. Adverse outcomes often develop together, as they are mutually-reinforcing, and can create complex problems that, without effective intervention, can lead to institutionalisation, homelessness, and premature death. This population is best understood within the larger framework of adverse childhood experiences such as parental drug-use, mental illness and incarceration, neglect, abuse, and family violence. Those at highest risk of adverse outcomes are indigenous males. Scholars within New Zealand have strongly argued that these disparities may be partly explained by the generational transference of a historical trauma response within indigenous communities, as well as modern-day systematic, social and interpersonal racism, which can cause young people to feel cultural shame, anger, anxiety and hopelessness. Māori males face a particularly racist discourse around their masculinity — one that can severely limit the expectations they have for their identity and their future. Health professionals are required to keep all of these factors in mind when conceptualising and working alongside high-risk males in New Zealand today.

Chapter Two

Current Interventions

Introduction

Almost 90,000 young people residing within New Zealand are at risk of poor long-term health, economic and social outcomes by the time they reach adulthood (Crichton et al., 2015). Interconnected and multi-layered issues can make successful intervention with at-risk youth highly challenging. This chapter will first explore conventional interventions utilised within this population, including cognitive-behavioural therapy, motivational interviewing, vocational and educational training, and life-skills training (Fadus et al., 2019; Knight et al., 2017; Ludbrooke, 2012; MacKenzie & Farrington, 2015). This will be followed by an investigation of an alternative and complimentary approach to therapy with high-risk youth, namely, adventure therapy (Bowen, 2016; Bowen & Neill, 2013; Norton et al., 2014). The chapter will conclude with a discussion on how such an approach may be the most effective way to reach, retain and initiate positive change in New Zealand's high-risk population.

Conventional Approaches

Young people face a variety of challenges within modern New Zealand society, including mental unwellness (Mulder et al., 2017; Tucker-Masters & Tiatia-Seath, 2017), a growth in blended and single-parent families (Spoonley, 2020), ever-increasing social media engagement (Best et al., 2014; Marino et al., 2018; McCrae et al., 2017), cyber bullying (Stubbing & Gibson, 2019), and a media saturated with images and narratives that portray violence, drug use, sex, and ecological doom (Clayton, 2020; Dowd et al., 2006; Earles et al., 2002). High-

risk young people also have to manage additional issues such as poverty, racism, symptoms of PTSD, a dysfunctional and unpredictable household, criminogenic environments, domestic and neighbourhood violence, and even early-onset substance dependence and mental illness (chapter one). Fortunately, there are many evidence-based interventions that can assist this population in managing these challenges. In depth discussion of all interventions utilised with this population (e.g. Functional Family Therapy) are beyond the scope of this paper, however, the interventions most relative to the current study will be examined in detail below.

Cognitive-Behavioural Therapy. Cognitive-behavioural theory emphasises the importance of one's cognitions in the formation and preservation of intrapersonal, interpersonal and behavioural problems (Kalodner, 2011). Interventions based on this theory seek to teach youth how to recognise harmful patterns of behaviour, personal environmental and emotional triggers, and dysfunctional core beliefs about others, the world and themselves (Ludbrooke, 2012). These issues are addressed through in-depth reasoning and discussion, personal experiments, and the gradual application of more functional behaviours and attitudes (Szigethy et al., 2012).

Cognitive-behavioural therapy (CBT) has been successful in treating a range of issues relevant to this population, including aggression and delinquency (Lambie & Gluckman, 2018; Landenberger & Lipsey, 2005; Lipsey, 2009; Snyder, 2018), substance use disorders (Magill et al., 2019), psychiatric disorders (Weisz & Kazdin, 2017), trauma (Konanur et al., 2015) and depression (James et al., 2013; Weersing et al., 2017). Regarding juvenile offenders in particular, Wilson, Bouffard and MacKenzie (2005) examined twenty structured, group-oriented CBT-

based programmes for juvenile offenders, including Reasoning and Rehabilitation and Moral Reconation Therapy. Findings suggested that CBT programmes were significantly more effective in lowering re-offending rates, in comparison to control groups. Later, Lipsey (2009) reviewed research on 548 study samples and 361 primary research reports published between 1958 to 2002, in order to determine which interventions produced the greatest reduction in recidivism within juveniles aged 12 to 21. The author concluded that the largest mean effect size was for CBT-based programmes (26%), followed by solely behavioural interventions (22%), group counselling (22%), and mentoring (21%).

CBT programmes have also been effective with youth who are experiencing emotional distress and substance use issues. For example, Konanur and associates (2015) utilised a randomised, waitlist-control design in order to determine the effects of a trauma-focused CBT programme on school-aged youth in a Canadian city. Results indicted no improvement for participants who received no treatment during the waiting period. However, significant improvements in PTSD symptomology were reported by the individuals, and their caregivers, who had attended the trauma-focused CBT programme. This effect was maintained at six-month follow-up. Additionally, in a study based within the United States of America (US), Rohde et al. (2012) found that a group-based CBT prevention programme specifically designed for at-risk youth (N = 341) with low mood, produced statistically significant reductions in self-reported depressive symptoms. The authors also posited that this effect may have hindered substance use escalation over a two-year follow-up period. Lastly, Williamson and colleagues (2013) piloted a 10-session group-based CBT interventions with high-risk (but not justice-involved) Southern Californian adolescents, aiming to promote social competencies and reduce aggressive behaviour. Results suggested that

the intervention significantly increased three measures of social competencies (i.e. decision-making, sense of self, and moral beliefs) and was successful in reducing both physical and verbal aggression.

Meta-analytic reviews of CBT-based treatments for youth and young adults have reported a range of short-term effect sizes that suggest moderate to large treatment effects for a variety of relevant problems, such as depression (0.53; Klein et al., 2007), suicidal ideation and self-harm (0.40; Labelle et al., 2015), anxiety (1.34; Vallis et al., 2020), youth offending (1.73; Koehler et al., 2013), alcohol and other substance disorders (0.58; Magill et al., 2019) and PTSD (0.30; Bastien et al., 2020).

Motivational Interviewing. Motivational interviewing is an effective (Brown et al., 2015; Lundahl et al., 2013; Sayegh et al., 2017), client-centred counselling strategy that encourages behaviour change through the exploration and resolution of ambivalence in regards to many issues, such as harmful substance use, unhealthy eating, or aggressive and anti-social behaviour (Miller & Rollnick, 2012). Ambivalence can be described as "feeling stuck" in a state of indecisions and/or hesitation due to experiencing conflict between two different paths, behaviours, or desires — each associated with specific and unique benefits and costs (Miller & Rollnick, 2012). According to several meta-analyses, motivational interviewing is a promising tool in the treatment of addictive behaviours (Brown et al., 2015; Lundahl et al., 2013; Sayegh et al., 2017; Tanner-Smith et al., 2013) and recidivism (McMurran, 2009).

Fore-mostly, motivational interviewing is known to increase treatment engagement and motivation to change among offending youth (Sinha, et al., 2003; Stein et al., 2006b; Stein & Lebeau-Craven, 2002) and adults (Anstiss et al.,

2011; Austin et al., 2011; Ginsburg et al., 2002; McMurran, 2009), consequently reducing rates of anti-social behaviour (McMurran, 2009), re-offending (Anstiss et al., 2011), and aggression (Clair-Michaud et al., 2016; Cunningham et al., 2012). In a New Zealand based study, Anstiss and associates (2011) investigated the effects of an offending-based motivational interviewing intervention with high-risk male prisoners (*N* = 58) sentenced for diverse crimes (e.g. violent, sexual, property, drug, and driving). They found that the men who attended the intervention were significantly less likely to be re-convicted within a two-year period in comparison to the men who did not. Authors also stated that the intervention increased participants' 'readiness to change' (Prochaska & DiClemente, 1994), by an average of one stage, while the control group remained at the same stage. These findings were echoed by a subsequent New Zealand based study also investigating the effects of a motivational interviewing intervention with 38 high-risk males in two New Zealand prisons (Austin et al., 2011). Effect sizes reported in these two studies were also very similar (0.27; Anstiss et al., 2011; 0.31; Austin et al., 2011).

Secondly, motivational interviewing is reported to be an effective, non-threatening, early-intervention strategy for the reduction of problematic substance use, the prevention of substance use escalation (D'Amico et al., 2018; Stein et al., 2011; Hogue et al., 2018), and the prevention of future correctional sentencing due to alcohol- or drug-related offences (D'Amico et al., 2013; D'Amico et al., 2008; Stein & Lebeau-Craven, 2002; Stein, et al., 2006a). Despite these positive findings, however, it should be noted that overall, treatment effects for motivational interviewing on drug and alcohol use are generally small to moderate. For example, in their meta-analytic review of motivational interviewing and adolescent substance use, which consisted of twenty-one studies and 5,471

participants collectively, Jensen and colleagues (2011) reported only a small effect size of 0.17. In addition, outcomes may vary depending on which construct in relation to substance use is being measured. For example, D'Amico and colleagues (2018) recently conducted a randomised controlled trial (RCT) in four primary care clinics across the US, utilising a brief motivational interviewing intervention for alcohol and marijuana use among at-risk youth (N = 294) over one year. The participants completed four online surveys at baseline and 3, 6, and 12 months. Unfortunately, at the one-year assessment, results indicated that there were no significant differences in resistance self-efficacy or rates of alcohol and marijuana use. However, compared to participants who received care as usual, the treatment group reported fewer negative consequences from both drinking and marijuana use at 12-months. There was also a small effect whereby the treatment group reported less time spent around peers who drank alcohol.

In summary, sound research on motivational interviewing and recidivism is rare and still somewhat inconclusive (Austin et al., 2011). In addition, although motivational interviewing meets the American Psychological Association's criteria for "promising treatment" in the area of adolescent substance misuse (Macgowan & Engle, 2010), and moderate to large long-term effect sizes have been reported for alcohol abuse (0.64; Bager & Vilstrup, 2010), tobacco use (1.23; Mujika et al., 2013), and marijuana abuse (1.43; Jungerman, Andreoni, & Laranjeira, 2007), small or null effects are frequently reported for motivational interviewing as a standalone treatment (Lundahl et al., 2010; Sayegh et al., 2017; Walker et al., 2011). Therefore, it has been suggested that motivational interviewing should ideally be utilised in conjunction with other treatment modalities (Burke et al., 2003.)

Educational and vocational training. High-risk youth often have low educational attainment due to leaving school early (Ball et al. 2016). Low educational attainment can lead to low employment opportunity, increased exposure to anti-social peers and activities, poverty, and stress (Andrews & Bonta, 2003; Carrigan & Maunsell, 2014; Fergusson et al., 2002; McCrystal et al., 2007; Tyler & Lofstom, 2009). It has been proposed that providing alternative education and vocational training opportunities to high-risk youth and young adults may be a practical and significant form of intervention (MacKenzie & Farrington, 2015; Visher et al., 2005). Employment not only empowers young people to break generational cycles of poverty and crime within their families (Lambie & Gluckman, 2018), but it improves cognitive skills and provides a reliable, legal income, which in turn contributes structure, self-esteem, attachment to a conventional lifestyle, and a manner of informal social control (Visher et al., 2005).

Research has supported the use of vocational and education training programmes in order to increase employment opportunities and consequently, decrease rates of reoffending in young adults and youth (Bouffard et al., 2000; MacKenzie, 2006; MacKenzie, 2012; McKenzie & Farrington, 2015; Visher et al., 2005; Wilson et al., 2000) — although, this theoretical relationship does not always translate into reality (Bouffard et al., 2000; Schaeffer et al., 2014). In a previous review of the evidence regarding “what works” with offending populations, McKenzie and Farrington (2015) investigated research outcomes found in RCTs, systematic reviews, and meta-analyses between 2005 and 2015. The authors concluded that educational and vocational programmes were effective in “reducing later criminal activities and increasing the employment of offenders” (p. 586). A more recent systematic review conducted by Newton and

associates (2018), however, did not substantiate this claim, stating that most evaluations were too methodologically poor to even provide a meaningful effect size. Some specific findings have been positive. For example, in New Zealand, Maré and Hyslop (2011) reported that pre-release participation in a vocational training programme was linked to a reduction in future offending for prisoners released between 2007 and 2008. In a US based study, Schaeffer and colleagues (2014) utilised an RCT research design and allocated 97 high-risk juvenile offenders to the Community Restitution Apprenticeship-Focused Training (CRAFT) programme or education as usual EAU. The CRAFT programme consisted of construction skills training, academic skills development, employability skills development, job placement assistance, and assistance with job retention. Interestingly, researchers found that although CRAFT was significantly more effective than EAU at increasing rates of employment as well as General Equivalency Diploma attendance, no intervention effects were observed for substance use, mental health outcomes, or consequent criminal activity.

Reports of effect sizes for this approach have been mixed. For example, after examining 33 experimental and quasi-experimental studies on educational, vocational, and work programs for adult offenders, Wilson and colleagues (2000) reported a random-effects weighed mean odds-ratio size of 1.52 — translating to treatment groups having a recidivism rate of 39% and comparison groups have a recidivism rate of 50%. Later, in their meta-analysis of 10 subsequent studies, Visher and his associates (2005) found a non-significant effect size of only 0.03 for reducing ex-inmates' re-arrest rates. McKenzie and Farrington (2015) and Newton et al. (2018) reported no effect sizes. In summary, outcomes have been mixed, with many scholars expressing some frustration concerning the methodical rigour of most studies in this field. However, due to the immense

importance of increasing ex-offenders' life opportunity though employment and education, this approach should be utilised in conjunction with other forms of treatment.

Life-skills training. Life-skills training is based on Social Learning theory (Bandura & Walters, 1977) and Problem Behaviour theory (Jessor & Jessor, 1977). These theories suggest that dysfunctional behaviours are most often due to the observation of anti-social or maladaptive behaviours and attitudes and the natural imitation of these as a person matures. High-risk youth typically grow up in dysfunctional home environments and are exposed to more anti-social peers and attitudes (Andrews & Bonta, 2003; Craig, et al., 2017; Johnson, 2017; Khodabandeh et al., 2018), often resulting in inadequate life skills, inadequate social skills and inadequate behavioural management skills — all of which are foundational for successful living and relationships (Gifford, et al., 2015; Gresham, 2002; Metzler et al., 2017; Tyler & Lofstom, 2009; Murray, 2007). Thus, life-skills training is believed to be essential for fostering the future personal and social success of at-risk youth (Botvin & Griffin, 2015). Life-skills training will often involve 20 to 30 sessions of one-on-one and group-based psycho-education (e.g., learning about addiction, peer pressure, anxiety or depression), and practice of personal competence skills (e.g., coping skills, decision making, emotional regulation, goal setting, self-monitoring, impulse control) and social skills (e.g., assertiveness, conflict management, good communication, building new social relationships).

Such programmes may be an effective intervention for reducing the complex issues associated with high-risk youth, including risky driving and sexual behaviour, violence and delinquency, and problematic substance misuse (Botvin & Griffin, 2015; Lambie & Gluckman, 2018; Ludbrooke, 2012; MacKenzie &

Farrington, 2015). This approach to risk management has been extensively researched, with studies involving various populations, problematic behaviors, age groups, and programme providers. Investigations have also ranged from small pilot studies (Botvin et al., 1984), to RCTs involving over 4,000 participants (e.g. Botvin et al., 2006). Such studies have also utilised both immediate-term (e.g. Botvin et al., 1994; Botvin et al., 2006) and long-term designs (e.g. Griffin et al., 2006; Spoth et al., 2008), including a 12-year longitudinal outcome study, which has suggested that life-skills training effects may be sustained even into young adulthood (Botvin et al., 1995).

Thus far, evidence for the effectiveness of life-skills training has been documented in 32 outcome studies, documenting significant reductions in adolescent substance use (e.g. Botvin et al., 1984; Botvin et al., 1980; Botvin et al., 2000; Botvin et al., 1995; Fraguela et al., 2003, Lowe et al., 2013; Scheier et al., 2001), increased drug refusal (Trudeau et al., 2003), decreased risky driving (Griffin et al., 2004), decreased violence and delinquency (Botvin et al., 2006), and decreased HIV risk through intravenous drug use (Griffin et al., 2006). It should be stated that most investigations, and all of the large-scale RCT studies, were conducted by researchers at Cornell University's Weill Medical College in the US (e.g. Botvin et al., 2006; Trudeau et al., 2003; Scheier et al., 2001), which may have introduced some researcher bias into the studies. However, independent research groups in other countries, such as Spain, have also confirmed LST's effectiveness in supporting at-risk and minority youth to increase their competencies in life and living (Fraguela et al., 2003; Zollinger et al., 2003).

Outdoor Experiential Learning Therapies

Although the above interventions have been somewhat effective, health professionals utilising one or more of these, are likely to encounter several

obstacles in the process of reaching and retaining high-risk youth for treatment. This includes, but is in no way limited to clients' chaotic lifestyles, vastly different world-views, unsupportive friends or family members (especially when the client is part of a gang), cultural barriers, low self-efficacy, distrust in the 'helping professions' and authority figures, learnt helplessness, and a negative cognitive schemas surrounding "therapy". In light of this, therapeutic approaches to working with high-risk young people have had to expand and develop over time; and one such alternative approach to reaching and retaining these individuals include the utilisation of 'the great outdoors' (Berman & Davis-Berman, 1995; Houge-Mackenzie et al., 2014; Stigsdotter et al., 2011; Williams et al., 2018). There is no sole term for, or manner in which to conduct therapy in the outdoors (Jordan, 2015; Norton et al., 2015). Rather, there is an array of approaches that fall under the umbrella of outdoor experiential learning therapies (OELT). These include outdoor behavioural healthcare (DeMille et al., 2018; Gas et al., 2019; Roberts et al., 2017), adventure-based counselling (Schoel & Maizell, 2002), eco-therapy (Clinebell, 1996; Jordan & Hinds, 2016), nature therapy (Berger, 2006; Berger & McLeod, 2006), nature-guided therapy (Burns, 1998), and the most well-known and theoretically developed, wilderness therapy (WT; Berman & Berman 1994; Cole et al., 2013) and adventure therapy (AT; Gass, Gillis, & Russell, 2020).

Adventure Therapy

Frustratingly, due to the theoretical and practical overlap in WT and AT (Gass et al., 2020), the terms 'Wilderness Therapy' and 'Adventure Therapy' can sometimes be used interchangeably in research reports (e.g. Gillis et al., 2016). For the purpose of this thesis, AT will be defined as "the prescriptive use of

adventure experiences provided by mental health professionals, often conducted in natural settings that kinaesthetically engage clients on cognitive, affective, and behavioural levels" (Gass et al., 2020, p. 1).

AT programming typically utilise a combination of small group work, nature-contact, adventure/risk, mastery, self-reflection, and one-on-one counselling (Bowen, 2016; Bowen et al., 2016; Deane & Harré, 2013; West & Crompton, 2001). AT programmes are also constructed in a variety of ways (e.g. day-only programmes, multi-day expeditions) and engage a range of populations (e.g. women, delinquent youth) in experiential activities (e.g. white-water kayaking, hiking) within the appropriate settings (e.g. bush, river, forest) in order to achieve a variety of outcomes (e.g., self-concept development; Gass et al., 2020).

The term "community-based adventure therapy" (CB-AT) is somewhat new but helpful (e.g. Tucker et al., 2013), as it differentiates between common AT programme structures. CB-AT programmes are based on the foundational theories of, and incorporate the therapeutic elements involved in AT, but do not necessitate extended trips, as it common in traditional AT. Instead, CB-AT programmes employ easily accessible equipment (e.g. kayaks) and locations (e.g. a local river) in order to conduct therapy with a wide range of individuals within the community (Tucker, 2013). In this way, CB-AT can easily be incorporated into programmes that are already utilising a group-based approach (Tucker, 2009). CB-AT programmes also avoid the main critique scholars and practitioners have expressed concerning AT, that is, that the extent of 'change' demonstrated during and directly after an AT-programme is unlikely to be maintained in the 'real world', when easily-accessible counselling, a supportive group, and a peaceful environment is removed (Gass et al., 2020). CB-AT is made to work with youth *inside* their 'real world' environments, but can still

provide a time of experiential learning, interpersonal connection, respite and reflection. Regardless of how a particular programme is constructed, if it is based on AT, the aim is to provide an immersive and engaging experience that involves a supportive group and natural or man-made obstacles which have the potential to create opportunities for self-reflection and personal development (Bowen et al., 2016; Norton, et al., 2014; Russell & Gillis, 2017). AT's theoretical framework, effectiveness, and feasibility with high-risk youth in New Zealand will be discussed in the following sections.

Theoretical Framework of Adventure Therapy. AT programme theory draws from a range of disciplines including education, philosophy, psychology and sociology (Bowen 2016). The foundational theories undergirding the theoretical framework of AT are Experiential Learning theory, Cognitive-behavioural theory, Ecological Systems theory, Psychodynamic theory, Self-efficacy theory (which falls under Social Cognitive theory), and Self-determination theory (Gass et al., 2020).

Experiential learning theory. Principles of Experiential Learning theory (Kolb, 1984) and Experiential Education Theory (Dewey, 1938) provide the basis for using outdoor adventure experiences as a tool for personal growth and change (Norton et al., 2014). Experiential Education theory (Dewey, 1938) suggests that active learning is the most valuable form of learning, as the participant is directly responsible for and involved in the process. It also proposes that a person learns best when they have multiple senses actively involved in a learning process. Kolb (1984) further supported and developed this idea, theorising that experiential learning takes place in four successive stages:

(1) Concrete experience, where the individual encounters a novel experience

or concept;

(2) Reflective observation, where the individual reflects on the experience and may notice inconsistencies between past ideas/understandings and the current experience;

(3) Abstract conceptualisation, where recurring problems force the individual to explore inconsistencies more deeply and perhaps correct pre-existing beliefs or behaviours;

(4) Active experimentation, where the individual takes 'risks' by applying their new understanding/behaviour to the original situation or to a similar situation in order to solve similar problems.

Scholars state that when an individual reaches the end of this process, they may experience an increased sense of personal and environmental mastery, they are more able to discern the cause and effect of their actions, and they have more confidence in responding to their environment in an experimental and creative manner (Houge-Mackenzie et al., 2014; Levack, 2003; Mutz & Müller, 2016). In light of these theories, adventure therapists believe that disequilibrium — which is when a participant experiences personal discomfort or failure during an AT programme and is forced to take a different action or change a belief in order to successfully handle a challenge — is absolutely vital to successful adventure programming (Nadler, 1993; Newes & Bandoroff, 2004; Taylor et al., 2010).

Cognitive-behavioural theory. Drawing from CBT, AT aims to manage presenting issues by closely paying attention to, investigating and addressing dysfunctional thinking patterns and how these may be influencing behavioural or relational patterns (Gillen, 2003). From this perspective, therapists pay specific attention to reactive behaviour during an activity, an individual's self-talk in stressful situations, and their response to other participants (Bowen, 2016).

Therapists may then discuss the cause and effects of these naturally occurring events with their client in therapy, and then assist them in applying what they have learnt about their thoughts and behaviours in these settings to other situations in their life (Gass et al, 2020).

Ecological Systems theory. Systems theory posits that a person's dysfunctional behaviours and beliefs stem from the complex social and biological ecology one grows up in (Bronfenbrenner, 1992; Bronfenbrenner 2005). As Taylor and company (2010) explain:

> "Just as a grizzly bear cannot be separated from its larger context—metaphorically it is 5% claws, teeth, fur, and bone and 95% forest, salmon rivers, ocean beach, and alpine meadow—so too, we are very much emergent properties comprising both biophysical and societal contexts." (p. 81).

Every person's unique social ecology will include a macrosystem (cultural attitudes and ideologies), exosystem (social services, industry, media, politics), mesosystem (religious or cultural groups, work, school, neighbourhood) and a microsystem (parents, siblings, and close friends; Bronfenbrenner, 1992). This theory underpins the importance of removing an individual from their usual surroundings and placing them in a different physical and social context — even just for a day. Adventure therapists believe that without a systemic change, which allows physical and psychological distance from one's problems and patterns, a person's reorganisation processes cannot be meaningfully triggered (Gilles, 1993).

Psychodynamic theory. Psychodynamic theory postulates that adult behaviour is determined by (mostly unconscious) emotional, mental and motivational forces developed in early childhood (Freud, 1915; Gabbard, 2004).

Stouffe (1999) argued that insight regarding one's unconscious thoughts and behaviours are integral to the process of change. AT processes naturally shed light on client's automatic or reactive responses to certain people and obstacles, and then provides a therapeutic space in which these reactions can be discussed and reflected on in as much depth as the client desires (Gilbert et al., 2004; Harris, 2015; Norton, 2010). Due to group-based and experiential learning processes, OELT approaches, such as AT, have the potential to provide participants with 'corrective emotional experiences' (Crisp & O'Donnell, 1998) — experiences that 'revise' the maladaptive assumptions that youth have adopted due to early trauma, or due to unsuccessfully completed psychosocial developmental tasks (Erikson, 1968; Gass, 1993).

Self-Efficacy theory. Social cognitive theory (Bandura, 1986) proposes that learning occurs within a social context where there is a reciprocal interaction between the person, behaviour, and their environment. Bandura's self-efficacy theory (1997) is a part of social cognitive theory. Self-efficacy can be defined as our perception of whether or not we have the ability, through sustained effort, to behave in a way that will lead to a desired goal or outcome (Bandura, 1995). In this way, self-efficacy can predict whether someone will attempt a behaviour, how much effort they will commit to it, and how likely they are to persevere despite failure or difficulty (Bandura, 2006). A person's level of self-efficacy can determine outcomes in various spheres of life (Sheeran et al., 2016), including recovery (abstinence efficacy; Adamson et al., 2009; Hayaki et al., 2011; Litt & Kadden, 2015; Maisto et al., 2000) and criminal desistance (pro-social efficacy; Bahr et al., 2010; Cuevas et al., 2017; Ludwig & Pittman; 1999; Maruna, 2001; Radak, 2016). Self-efficacy is gained and grown in four main ways (Bandura, 1977), all of which are inherent to AT programming (Gass et al., 2020):

(1) Mastery experiences: Through mastering a task/skill, individuals learn which behavioural/cognitive responses to failure are constructive and which are not. When they do succeed, they gain the assurance within themselves that if they persevere in a task, they are able to achieve a desired outcome.

(2) Vicarious experiences: When individuals see people similar to themselves succeeding in a goal/task through sustained effort, it strengthens their belief in their own ability to achieve success in that area — if they do not give up.

(3) Verbal persuasion: Encouragement from family, friends or mentors can greatly influence an individual's belief that they possess the qualities required to succeed.

(4) Emotional and physiological states: Being tired, happy, or scared can affect how a person judges their own self-efficacy. More frequent experiences of positive emotion can bolster a person's belief in their ability to succeed in life.

Self-determination theory. Self-determination theory (Ryan & Deci, 2017) posits that people are motivated by three innate and universal psychological needs, namely:

(1) Competence: People need to feel effective within their environment and gain a sense of mastery in tasks relevant to their lives.

(2) Relatedness: People need to experience reciprocal relationships with others that foster a sense of belonging and attachment.

(3) Autonomy: People need to engage in behaviour that is self-endorsed and feel congruent with their sense of self.

When these needs are met, it is theorised that people will function and continue to grow psychologically as they age. Unfortunately, this is not always the case. In dysfunctional or violent households, for example, an individual's growth can become hindered as their fore-most environment discourages feelings of competence, relatedness, and autonomy (Ryan & Deci, 2017). AT programming can assist in helping such young people regain some ground in these areas (Gass et al., 2020). AT programmes present immersive and dynamic challenges in unfamiliar environments, however, because there is always a natural succession of these challenges, success is inevitable. This process is what helps to promotes a sense of competence and autonomy in the person partaking in the challenge. AT programming is also highly dependent on teamwork, mutual trust and the building of supportive relationships within a group. This process naturally helps to foster a sense of relatedness in participants.

Effectiveness of Adventure Therapy. Research on the effects of outdoor-based interventions with youth in Aotearoa is very rare (Arahanga-Doyle, 2019; Eggleston, 2000). Firstly, Erin Eggleston (2000) conducted a qualitative follow-up study with 12 young offenders, who had partaken in the wilderness-based Whakapakari youth programme. Two findings are worth mentioning. Firstly, although the programme seemed to 'spark' much cultural, relational and personal growth, participants seemed unable to maintain these developments when they returned home — a main criticism of WT (Gass et al., 2020). Secondly, although the programme focussed on reducing recidivism, this was not the success participants were most concerned with or happy about. Instead, the opportunity and desire for relationship-centred developments (e.g. whānaungatanga, helping, trusting, respecting) seemed to be the most salient to the attendees of the programme. Investigating a different population, Hitaua Arahanga-Doyle (2019)

sought to uncover the effects of an adventure education programme (a 7-day sea voyage) on school-aged Māori and New Zealand European adolescents. Findings indicated that the programme had led to an increase in psychological resilience, levels of self-esteem, and 'positive outlook' in both Māori and New Zealand European adolescents. Interestingly, the author also reported that improvements in psychological resilience appeared to be a result of the social identity adolescents formed within their group during the voyage.

Outside of New Zealand, several meta-analyses and reviews have reported on the therapeutic potential of AT programming for youth with socio-emotional and behavioural dysfunction (e.g. Harper, 2017). One meta-analysis conducted by Bowen and Neill (2013) reviewed 197 studies on AT programme outcomes for youth between ages 10-17. The authors found that AT had larger effect sizes than other, non-outdoor therapies (g = .47 and .14, respectively). They also reported that short-term outcomes were significant for seven out of the eight outcome categories they had identified, namely, clinical (g = .46), academic (g = .44), self-concept (g = .41), social development (g = .41), behaviour (g = .39), family development (g = .31), physical (g = .31), and morality/spirituality (g = .12). Longitudinal studies included in this review indicated that AT programmes produced enduring effects. Additionally, in their recent investigation of how AT programmes effect self-concept — including locus of control, self-efficacy, and self-esteem — Fleischer and colleagues (2017) conducted a meta-analysis that included thirty studies and 1802 at-risk or high-risk participants (collectively) who presented with mental health or behavioural issues. The authors concluded that the short-term effect size of AT on self-concept was moderate (g = 0.51 to g = 0.56). Again, longitudinal studies suggested that these changes were maintained. In another noteworthy meta-analysis, Gillis et al. (2016) compared the treatment

outcomes of young people in adventure-based and non-adventure-based interventions; specifically looking at studies which utilised the Youth Outcome Questionnaire (Y-OQ) and/or the Youth Outcome Questionnaire Self-Report (Y-OQ-SR). Outcomes in studies using the Y-OQ, indicated a large effect size (g = .98), as did studies utilising the Y-OQ-SR (g = .80). Furthermore, an early review by Winterdyk and Griffths (1984), which included studies conducted prior to 1980, found that AT programs showed promise in reducing anti-social behaviour and re-offending in delinquent young people. This finding was later confirmed by West and Crompton (2001), who reviewed programme evaluations published between 1966 and 1995. The authors found that fourteen of the sixteen evaluations assessing changes in self-concept among high-risk youth reported statistically significant improvements, and eight of the fourteen studies reporting on re-offending rates found reduced recidivism in treatment groups.

Two recent studies must also be mentioned. In a recent US study, Johnson and associates (2020) utilised the Y-OQ-SR in their study on the effects of a WT programme with participants (*N* = 816; ages 13-17) who had a history of complex trauma and presented with depressive, substance use, anxiety, trauma-related or disruptive behaviour disorders. The intervention consisted of continuous trekking, where participants were immersed in wilderness for 10-12 weeks. They also received one-on-one psychotherapy and practiced trauma-sensitive yoga. Adolescents and caregivers both reported statistically significant improvement in personal and family functioning. Intervention effects remained stable for up to one year. Research on the effects of AT programming on patients experiencing psychosis is fairly new. In a study conducted in Canada, Bryson and colleagues (2013) employed a mixed-methods pre-post study design in order to examine the effects of 6-week AT intervention for 15 adults diagnosed with psychosis.

Following participation, significant improvements in emotional well-being, engagement in the recovery process, and energy levels were reported. However, interestingly, outcomes were insignificant regarding self-esteem and global health. In summary, meta-analyses, reviews, and individual studies inside and outside of New Zealand suggest that AT can be an effective intervention strategy for vulnerable and hard-to-reach populations presenting with trauma, delinquency, psychosis and other behavioural problems.

Effectiveness of community-based Adventure Therapy. Research exploring the effects of CB-AT is sparse, but thus far outcomes are congruent with other AT research. For example, studies have found that CB-AT is effective in reducing anxiety and stress and increasing self-efficacy and coping skills in adults (Koperski et al., 2015; Wolf & Mehl, 2011) as well as improving behavioural, social, and emotional functioning in at-risk youth (Tucker et al., 2013; Vankanegan et al., 2019). Early research on CB-AT was predominantly descriptive (Alvarez & Stauffer, 2001; Berman & Davis-Berman, 1995; Fletcher & Hinkle, 2002), and empirical studies focussed on short-term interventions (e.g. Davis et al. 1995; Herbert 1998) with small numbers of participants (e.g. Forgan and Jones 2002; Glass and Myers 2001). Anita Tucker and her colleagues (2013) were the first to conduct a large-scale study on US young people (N = 1,135; ages 6-21), comparing the effects of five different treatment conditions, including a CB-AT programme that comprised of interactive interventions such as team challenges and creative projects. Participants in this study presented with various types of disruptive, adjustment, mood, and anxiety disorders. The researchers found that participants who were exposed to either of the CB-AT conditions demonstrated significantly larger reductions in behavioural problems (CB-AT and counselling: d = -2.3; CB-AT only: d = -2.1), compared to those assigned to

treatments without a CB-AT component (Counselling and group therapy: ***d*** = -2.0; counselling only: *d* = -1.9; support services only: *d* = -0.42). The former also had a higher likelihood of being "recovered" at discharge, that is, passing the clinical cut-off score on the Ohio Youth Problem Severity Scale. Most recently, Christie Vankanegan and her associates (2019) conducted a study on the effects of a CB-AT programme on young people (*N* = 42; ages 11-18) presenting with a variety of mental health concerns within the US. The researchers utilised the Y-OQ-SR questionnaire to measure change. The programme was intensive and included a range of activities such as archery, canoeing, orienteering, rock climbing, and a wilderness challenge. Data analysis showed improvement in overall functioning (Y-OQ-SR Total Score) and on the sub-scales measuring interpersonal relationships and critical issues (e.g. suicidal ideation, self-harm). However, no significant change was reported within the areas of emotional, social or behavioural functioning. To the researcher's knowledge, no studies have investigated the effects of a CB-AT programme specifically for justice-involved youth or young adults.

Feasibility of Adventure Therapy for High-risk Youth in New Zealand

Gilbert and his associates (2004) have stated that the combination of group-based support, adventure activities, and the natural setting in which they take place, has "a rich source of healing potential, which in a number of ways goes beyond what therapy has to offer…" (p. 31). Powers and colleagues (2015) have also advised that individuals who have experienced chronic or poly-trauma, often demonstrate low emotional engagement in therapy, and therefore, alternative interventions may indeed be required. In light of the multifarious and complex problems facing high-risk youth within New Zealand, interventions that can "go

beyond" traditional approaches are exciting, necessary, and worth investigating. From the literature, it is apparent that there are several unique therapeutic features inherent in this approach that make it one of the most promising avenues for high-risk youth in Aotearoa (Bowen & Neil, 2013; Gass, 2003; Pryor et al., 2006; Gass et al., 2020). The distinctive therapeutic features of AT and their relevance to this population will be outlined in the following section.

Therapeutic alliance. Firstly, this approach can provide a unique opportunity for in-depth assessment (Gass, 2003; Pryor et al., 2006), as it supplies concrete, unbiased, and real-time information about a given client's behaviour, perceptions, belief systems and use of language (Bowen, 2016). This may provide more clarity around a person's particular needs, and consequently, may produce a more precise treatment intention (Bowen, 2016). Furthermore, creating a therapeutic alliance with at-risk or high-risk young people remain a fore-most challenge for health professionals (Hanna et al., 1999; Karver & Caporino, 2010; Resnik & Wojcicki, 1991; Sommers-Flanagan et al., 2011). Traditional face-to-face assessment and counselling can be highly uncomfortable for this population (Karver & Caporino, 2010). Therefore, this approach is likely to be unproductive or simply avoided by those who need it most (Jansen, 2004; Rickwood et al., 2007; Sommers-Flanagan & Bequette, 2013). This may be due to anxieties around confidentiality and privacy (Fox & Gottfredson, 2003; Spoth et al., 1996), unclear or low expectation regarding therapy (Midgley et al., 2016), feeling that an intervention is irrelevant (Redmond et al., 2004; Spoth et al., 2000) or fear of judgement (Hanna et al., 1999). In his doctoral thesis, Daniel Bowen (2016) argued that AT can be highly effective in dissolving these anxieties, and subsequently, persuading resistant clients to engage more fully in the one-on-one counselling component typically found within AT programming. Establishing a

trusting relationship may be easier with AT, because conducting therapy in nature and within a group-based setting, does not typically fit with young people's negative schemas around "assessment" or "therapy", and this can greatly assist in dispelling low expectations and initial defensiveness (Bowen, 2016; Gass, 2003; Jansen, 2004). Providing therapy on 'neutral ground' also promotes mutual vulnerability and accordingly, may shift the power imbalance that many people experience in a traditional therapeutic setting (Doucette, 2004; Fletcher & Hinkle, 2002; Jansen, 2004). This also assists in achieving a therapeutic alliance with hard-to-reach clients.

Natural setting. The natural setting intrinsic to AT serves as an additional tool for psychological healing and well-being (Barton & Pretty, 2010; Greenleaf et al., 2014; Heinsch, 2012; Revell et al., 2014; Pryor et al., 2006). Wilson (1984) argued that human beings have a biologically-based sub-conscious yearning for nature due to millenia of intimacy with the natural world. This hypothesis has been supported by research linking time spent in nature (or imagery of natural landscapes) with health and well-being (Depledge et al., 2011; Maas et al., 2006), reduced physical pain and healing time (Lechtzin et al., 2010; Ulrich 1984), reduced stress (Berto, 2014; Hull & Michael, 1994; Kaplan, 1995), an improvement in cognitive functioning, concentration, attention, impulse control (Berto, 2005; Bratman et al., 2012; Kuo & Taylor 2004; Schertz, & Berman, 2019) and improvement in mood (Bratman et al., 2015; Frühauf et al., 2016). Aotearoa is well-known for its beautiful and easily-accessible beaches and forests, and therefore, outdoor-based therapies are highly feasible in any area within New Zealand.

Strengths-focused. High-risk youth have frequent exchanges with authority figures such as police officers, teachers, and social workers whose occupation is

to correct what they perceive to be problematic (Baglivio et al., 2016; Randall, 2015). The frequently adopted problem-focussed approach may hinder the hinder the connection between therapist and client (Karver & Caporino, 2010; Randall, 2015). AT programmes, however, are inherently strengths-based (Gass & Gillis, 2003; Bowen, 2016). Challenging activities, such as rock-climbing or river rafting, typically put clients in a position where they must capitalise on their known strengths, and discover new ones, in order to overcome the associated physical and mental obstacles (Gass et al., 2020). Because of this, it is often the particular activity, the group, and the natural process of disequilibrium — rather than another person — that facilitate growth and development within a client (Nadler, 1993). When participants do overcome challenges through the utilisation of their strengths or talents, or by practicing new ones, it renews their sense of mastery and self-efficacy, resulting in more momentum in the now-rewarding pursuit of new ways of thinking and behaving (Kuk & Holst, 2018; Nadler, 1993).

Kinaesthetic metaphor. The use of kinaesthetic metaphor is one of the most unique and advantageous features of AT (Estes, 2004; Gass, 1993; Hartford, 2011; Porter, 1999; Gass & Priest, 2006; Russell & Gillis, 2017; Schoel & Maizell, 2002). Even in traditional counselling settings, the use of metaphor is said to increase positive outcomes and produce more enduring results (Levitt et al., 2000; Lyddon, 2001; Kopp, 1995; Martin et al., 1992; Meier & Robinson, 2005; Powell et al., 2006). Linguistically, a metaphor is a figure of speech in which we speak of one thing as representative or symbolic of another thing (Kirby, 1997; Kövecses, 2002). Effective metaphors provide a vivid image that can be easily remembered (Gass & Priest, 2006; Martin et al., 1992; Porter, 1999), simplify descriptions of complicated phenomena (Gas, 1993), link previously disconnected ideas (Gass & Priest, 2006), make abstract ideas more concrete

(Kopp, 1995; Porter, 1999), suggest how a situation could be assessed (Hartford, 2011; Stouffer, 1999), and assist in attributing meaning to a experiences (Lakoff & Johnson, 1980; Levitt et al., 2000). A 'kinaesthetic metaphor' is a metaphor that is felt, or experienced physically (e.g. persistence in scaling a high cliff despite fear and discomfort being symbolic of the difficult but rewarding process of becoming sober), rather than brought to one's mind (e.g. seasonal changes as symbolic of the cyclical seasons of life and living), and can therefore be especially powerful in terms of meaning-making, memory and motivation (Gas et al., 2020). Metaphor, especially kinaesthetic metaphor, can be highly valuable to young people who have difficulty with learning, memory, or processing due to a lack of schooling and/or early trauma and neglect (Morrow & Villodas, 2018; Spann et al., 2012). In his seminal paper, Bacon (1983) argued that outdoor adventure experiences (and the natural world) are full of prospective therapeutic and kinaesthetic metaphors, and that OELT aim to draw on these intentionally in order to augment the learning and growth of clients. Gas (1993) later suggested that in order for kinaesthetic metaphors to make a lasting impact, clinicians must:

(1) Choose an activity that is compatible with the circumstantial needs of their particular programme's participants;
(2) Highlight connections between the activity and participants lived experience during the activity;
(3) State the similarities of mastering the activity and mastering relevant real-life situations in participants lives;
(4) Debrief on all of these again after the activity.

Contrasting experience. High-risk youth commonly move in environments that are adverse, encountering issues such as interpersonal violence, drug abuse, poverty and stress, mental illness, criminality, homelessness and the pre-

mature deaths of friends and family (Besemer et al., 2017; Fairchild et al., 2013; Harper et al., 2003; Thornberry & Henry, 2013). Naturally, AT experiences and environments are in stark contrast to such clients' typical realities or states (Gass et al., 2020; Norton et al., 2014). Initially, AT programmes can provide a sanctuary for high-risk young people; a safe place away from the always-present stressors and dangers in their lives (Autry, 2001; Newes & Bandoroff, 2004). More than respite though, physical distance from common distractions, normal routines and familiar environments, can provide space for a detached and thus, novel perspective on the people, relationships and elements within their lives that are not beneficial or upbuilding (Gillis et al., 2008; Russell & Gillis, 2017). According to Norton and colleagues (2014), 'contrasting experience' is an important step in creating an intrinsic, rather than extrinsic, motivation to re-structure and re-evaluate the direction of a client's life.

Developmentally relevant. Young people are predisposed to seeking out opportunities for self-concept development and excitement through risk-taking behaviour (Crone et al., 2016; Erikson, 1968; Romer, 2010; Steinberg et al., 2008). Thus, adventure activities are attractive, hold social status (Bowen, 2016) and retain the excitement of the unknown and the unexpected (Norton et al., 2014). Additionally, according to Erikson (1968), young adults are also developmentally in need of love and belonging. Provided that AT is conducted in an exciting, supportive, group-based atmosphere, it has the unique ability to meet the developmental needs of youth (Bowen, 2016; Nadler, 1993). These developmentally relevant features of AT can naturally increase programme attendance in hard-to-reach youth.

Culturally relevant. Outdoor-based interventions, such as AT, are more culturally relevant to indigenous youth (Jansen, 2004; Jeffery, 2017; Levack, 2003;

Warbrick, et al., 2016). Most psychological approaches and practices have been developed and popularised within the boundaries of a Western culture and world-view (Valentine et al., 2017), and unfortunately, these approaches and practices often neglect the familial and spiritual aspects that comprise good health (Durie, 2001; Valentine et al., 2017). Both the spiritual and familial facets of health have conceptual ties to the natural environment. A cornerstone of te ao Māori (the Māori world view) is awareness of the sacred, interconnected and inherent bond humans have with the natural world — and how frequent contact with specific locations (e.g. forests, mountains, rivers and beaches) can strengthen one's identity and well-being through maintaining a spiritual connection with tīpuna (ancestors) and whānau (Durie, 2001; Rua et al., 2017). When it comes to therapy, then, integrating places of ancestral significance may be highly valuable and restorative to some indigenous young people. Along with immersion in the natural environment, Jeffery (2017) also argued that the centrality of relationships, the use of metaphor, and group collaboration, are all features of AT that are "compatible with elements of Māori culture" (p. 101).

Conclusion

This chapter outlined the rationale and effectiveness of common therapeutic approaches utilised with high-risk youth in New Zealand, including, cognitive-behavioural therapy, motivational interviewing, vocational and educational programming, and life-skills training. Although these approaches are found to be effective, reaching and retaining this population for intervention, addressing multiple issues simultaneously, and assisting youth to maintain change while they live and move in arduous family and peer environments, poses a considerable challenge. Alternative approaches, such as AT or CB-AT, have the potential to overcome some of these difficulties. This chapter provided an outline of the

theoretical framework supporting AT, reviewed the effectiveness of AT and CB-AT, and concluded with a discussion on the feasibility of utilising AT with high-risk youth in New Zealand, based on its unique characteristics. These include facilitating therapeutic alliance with oppositional or involuntary clients, the natural setting in which therapy takes place, the strengths-based approach, the use of kinaesthetic metaphor, contrasting experience, and its developmental and cultural relevance to Māori and other New Zealand European youth.

Chapter Three
Surf Therapy

Introduction

Without effective intervention, high-risk young people in New Zealand are at risk of detrimental life outcomes, including homelessness, institutionalisation, and premature death. Although there are many evidence-based treatments available, several challenges exist in reaching this population, addressing multiple, mutually-reinforcing issues, and maintaining positive change. Alternative approaches, such as CB-AT programmes may be able to assist with these challenges. In recent years, the use of surfing as an outdoor therapeutic tool has been increasingly used and researched within several vulnerable populations. This chapter will begin by briefly outlining the history of surfing and the significance of said history to the indigenous people of New Zealand. This will be followed by an in-depth exploration of the characteristics inherent in surfing and surf therapy that may account for the positive outcomes observed in participants. A description of surf therapy outcomes across the world, as it currently stands, will also be provided. The chapter will conclude with a discussion concerning the ways in which surf therapy falls under the larger umbrella of AT, specifically CB-AT, and will briefly outline the current state of surf therapy within New Zealand.

The History of Surfing

Surfing is said to have originated in the Polynesian Islands of the Pacific Ocean (Houston & Finney, 1996; Moser, 2016). The practice of 'wave riding' can be traced back to approximately 3,000 BC years in places such as West Africa, India, Peru, and Tahiti (DeLaVega, 2011; Fuchs & Schomer, 2007). However, surfing has been best documented, developed and preserved within the

Hawai'ian archipelago (Finney, 1959). According to Clarke (2011), Hawai'ians traditionally performed six different types of 'surfing', of which he'e nalu (standing on a board) was most revered. Other activities included pae po'o (body-boarding), kaha nalu (body surfing), pākākā nalu (canoe surfing), he'e pu'e wai (river surfing) and he'e one (sand sliding). David Malo (1951) was the first to describe surfing as Hawai'i's 'national sport'; widely practiced and beloved by both men and women of all ages and social standings.

More than a sport, surfing was a practice embedded within the political, cultural, social and spiritual fabric of Hawai'ian society. Public surf competitions were a primary method in which ali'i (chiefs) could exhibit personal strength and challenge another's prowess and bravery (Finney, 1966). In addition, certain types of surf boards, and certain surf locations were reserved exclusively for chieftains and their queens. One narrative tells of a young athlete who was executed for surfing on the same wave as the queen at Oahu, Waikiki beach (Finney, 1959).

Every part of surfing was governed by a ritualised set of practices called kāpu (Laderman, 2014). For example, before trees were cut down to construct a board, a kahuna (priest) placed a ho'okupu (fish offering) by the chosen tree as thanksgiving (Finney, 1959). Once the board was shaped, a dedication ceremony was held at the local heiau (temple), again signifying a sensitivity to and gratitude for the gifts of earth and ocean (Houston & Finney, 1996; Kampion, 2003; Taylor, 2007), and of course, "[insuring] its success in riding the waves" (Finney, 1959, p. 338). Traditional Hawai'ian kū mai (arise) chants were also frequently chorussed before the ocean, as they were believed to conjure and command ocean swells (Walker, 2011).

Surfing also carried social significance. According to Ishiwata (2002), surfing endowed boys and girls with spiritual principles, taught them how to safely and respectfully interact with the ocean for nourishment and recreation and helped them to maintain physical, mental and emotional health through play, competition and social interaction. Surfing also provided a valuable method of courtship (Finney, 1959).

Surfing is reported to have declined heavily in the Hawai'ian archipelago following the arrival of Captain James Cook and the American missionaries, between 1778 and 1820. As with Māori, the introduction of foreign pathogens resulted in a major population decrease (Laderman, 2014; Walker, 2011). American missionaries also strongly discouraged surfing, as they believed it promoted gambling, pride, idle behaviour, idolatry and sexual immorality (Clark, 2011; Walker, 2011). During this time, the Hawai'ian society was also "fundamentally reshaped" (Laderman, 2014, p. 10) by the establishment of major industries, such as whaling, sandalwood and sugar. Unfortunately, these significant societal changes lead to traditional pastimes, such as surfing, being "pushed to the brink of extinction" (Finney, 1966, p. 58). Again, as with Māori, the historical trauma resulting from these events are still felt among native Hawai'ians today (Pokhrel, & Herzog, 2014).

America's annexation of the Hawai'ian Islands in 1898, was closely followed by a revival of surfing, willed by both pure and impure motive. Inside of Hawai'i, Alexander Hume Ford founded the Outrigger Canoe and Surfing Club in 1908, a white-male-only organisation, which aimed to promote the sport to wealthy Americans, whose presence in Hawai'i would boost tourism and real estate sales (Walker, 2011). In response to the blatant exploitation of their persecuted culture, local natives founded Hui Nalu in 1911 (Walker, 2011). Outside of Hawai'i, George

Freeth and Olympic-medalist Duke Kahanamoku popularised the sport through awe-inspiring surf demonstrations to large crowds in Southern California (1912) and Australia and New Zealand (1914), respectively (Booth, 2013). Surfing advanced swiftly in the 20th century, through surf board and wetsuit innovations and production, and media exposure that glorified the surf lifestyle — detached from its cultural roots and political injustices. By the 21st century, thriving communities of surfers had been established in the US, Australia, South Africa, New Zealand, France, and Great Britain (Walker, 2011).

Today, most surfers are naive to their participation in one of the world's oldest sports; a sport that retains deep scars and deep roots in indigenous spirituality (Ishiwata, 2002). This is unsurprising. The Calvinist conversions of the 1820, followed by the exploitation of he'e nalu a hundred years later, have left the act of surfing completely stripped of its spiritual, cultural, and social elements.

These elements come to be especially significant when conducting surf therapy with Māori youth. According to tradition, Māori migrated to Aotearoa on waka (boats) from an island or group of islands in Polynesia in the South Pacific Ocean. There are also many similarities between Māori culture and language and that of Hawaii, Tahiti and the Cook Islands. For example, the word for surfing in Māori is 'eke ngaru', which is very similar to 'he'e nalu'. In understanding the origins of surfing then, it becomes apparent that surf therapy programmes provided in New Zealand have the potential to reconnect Polynesian youth with a deeply meaningful past-time that their ancestors had likely practiced and enjoyed decades ago. In light of this, engaging these young people in surf therapy programmes could achieve more than mere improvements in emotional and physical health; if clinicians take the time to present and teach surfing as a part of Polynesian heritage, they are also choosing to honour surfing's roots in

indigenous spirituality and culture, to support Māori youth in the construction of a positive indigenous identity, and empowering them to “take back” the ocean and its waves as part of their own social and cultural space — a space often thought of as belonging to wealthy white males, due to the exploitation of surfing by Alexander Ford (Cornelissen & Grundlingh, 2013).

In summary, it is not only appropriate, but ethically consequential, to reflect on surfing’s history (Ishiwata, 2002). As Thompson (2011) explains, to remain naive to surfing’s “racially structured past”, can make participants in the sport unknowingly “complicit" in sustaining inequitable power dynamics (p. 2118). The opposite is also true: to be aware of this reality and to engage in and teach surfing with this history in mind, is to stop and perhaps even reverse some of these unjust power dynamics. It is also worth noting here that the Code of Ethics for Psychologists working in Aotearoa requires that psychologists use their knowledge and power to address unjust societal norms that act to disempower people in any and all spheres of living, and that they empower clients to effectively meet their personal and cultural needs where ever possible (New Zealand Psychological Society, 2002).

Surfing as Therapy

With the passing of time and with the arrival of he‘e nalu on distant shores, the ancient practice has undergone yet another development, drawing even more diverse groups of people unto itself. In the last 15 years, surfing has evolved into a promising therapeutic tool for some of the world’s most vulnerable and hard-to-reach populations, including children and adults with cognitive, physical or other challenges (e.g. Moore et al., 2018; Parsons, 2018; Stuhl & Porter, 2015; Van Ewijk et al., 2020), active duty service

members and veterans (e.g. Otis et al., 2020; Walter et al., 2019; Rogers et al., 2014), vulnerable and marginalised young people (Gomes et al., 2020; Matos et al., 2017; Sarkisian et al., 2020; Snelling, 2016) and adults struggling with addiction and poly-trauma (Harris, 2015). The utilisation of surfing for the prevention and treatment of social and health challenges has recently been defined as 'surf therapy' (Marshall, et al., 2019).

There are many therapeutic qualities inherent in surfing that is shared by other sports previously used within the sphere of youth development (e.g. rugby; Wheaton et al., 2017). However, in addition to these, there are also unique characteristics that belong solely to surfing. Some of the main therapeutic characteristics frequently mentioned in surf therapy literature thus far have included flow, mastery, and the construction of meaningful interpersonal relationships. Other, lesser explored characteristics that are also relevant, include positive risk-tasking, the 'blue care' effect, and surfing as a means of spiritual re-awakening. These six features will be outlined in the following sections.

Flow. "Flow" was first described by psychologist Mihalyi Csikszentmihalyi (1975, 1988, 2020), during his investigation of people experiencing intense enjoyment, creativity, and peak performance in activities such as painting, dancing, and rock-climbing. Twenty-five years of research has now established a firm link between frequent flow experiences and an improved sense of well-being and happiness in various populations, including young people (Carpentier et al., 2012; Csikszentmihalyi, 2020; Fritz & Asvec, 2009; Lefevre, 1988; Nakamura & Csikszentmihalyi, 2009; Rogatko, 2009; Sahoo & Sahu, 2009).

Researchers investigating the experience of surfing in general have frequently described distinctive features of flow, including, an enraptured one-ness with the board and with the oceanic environment (Muirhead, 1962), loss of self-awareness (Kerby, 2010; Taylor, 2007), total immersion and concentration (Partington et al., 2009; Taylor, 2007), a continual pursuit of 'just manageable' waves (Partington, et al. 2009; Stranger, 1999), distortion of time (Stranger, 1999; Taylor, 2007) and a feeling of transcendence (Amrhein et al., 2016; Fuchs & Schomer, 2007; Morgan & Coutts, 2016; Moriarity & Gallagher, 2001; Taylor, 2007). Accessing this state of flow can greatly increase the surfer's sense of well-being. For example, in a US based study, Cheng and Lu (2015) recently reported that the frequency at which casual surfers entered a flow state while surfing significantly mediated the relationship between the act of surfing and reports of well-being. Flow experiences and subsequent feelings of well-being in participants have also been frequently documented in surf therapy literature (e.g. Harris, 2015; Caddick et al., 2015a; Marshall et al., 2020; Sarkisian et al., 2020). Especially relevant to establishing a therapeutic alliance with high-risk youth, Harris (2015) reported that experiencing a state of flow during surf therapy sessions seemed to reduce clients' self-awareness, and that this resulted in typically-defensive or difficult clients being more receptive to the therapeutic input of facilitators and clinicians.

One relevant explanation for the link between flow and well-being, is that flow is dissociative in nature (Moriarity & Gallagher, 2001; Stranger, 1999). In this way, accessing flow while they are in the ocean "allows [the surfer] to forget other worries and stresses and reconnect to their own bodies and selves" (Britton & Foley, 2020, p. 22). Other researchers have also stated that,

when a person is in a state of flow, ***abstract***, self-focussed, ruminating thoughts may finally cease, as the individual begins to focus on a ***concrete*** challenge (Celsi et al., 1993; Partington et al. 2009; Robinson & Tamir, 2011). This hypo-egoic state is highly valuable to individuals who are struggling with symptoms of PTSD, anxiety, depression or addiction (Leary & Guadago, 2011; Nakamura & Roberts, 2017; Robinson & Tamir, 2011).

Mastery. Mastery means gaining proficiency, control, sufficient skill or comprehensive knowledge in a particular domain of life (Compton & Hoffman, 2019). Experiencing a sense of mastery in developmental tasks, work, or leisure, is essential for building resilience (Montpetit & Tiberio, 2016; Torres et al., 2011), self-efficacy (Bandura, 1977; Forgeard & Benson, 2019; Stone, 2018) and a positive self-concept (Deane & Harre, 2013; Jennings et al., 2006; Stott et al., 2015). Unfortunately, mastery experiences often go unnoticed and uncelebrated in the early years of children who encounter neglect or abuse in their homes (Morgan, 2010). According to Morgan (2010), this contributes to the engrained, disempowering beliefs and maladaptive coping behaviours that high-risk youth often demonstrate. Fortunately, a young person's sense of mastery can be regained when they do achieve success in relevant undertakings later in life, and when this is recognised and honoured by trusted others in their lives (Gass et al., 2020; Morgan, 2010). Experiencing mastery in one domain or activity seems to be 'generalisable', having the power to strengthen a person's belief that they can also succeed in other tasks and challenges that are relevant to their life (Morgan, 2010; Newes, 2005; Norton et al., 2014).

In light of this, helping young people to regain a sense of mastery, through surfing, is a key therapeutic element of surf therapy, and has often

been documented in surf therapy literature (e.g. Hignett et al., 2018; Gomes, et al., 2020; Marshall, et al., 2019; Morgan, 2010). Surfing, when catered to the individual's skill level, is a highly enjoyable activity. Often, the joy that people experience in the ocean is what maintains their commitment to surfing despite failure, frustration, and fatigue — until mastery can be attained (Harris, 2015; Morgan, 2010; Stranger, 1999). Naturally, the enjoyment and respite from daily stresses, coupled with a growing sense of mastery, produce a great boost in affect and confidence (Marshall et al., 2019). When surfing is continued, mastery will increase, and theoretically, this experience has the potential to affect the negative internal working models related to a person's self-concept (Bretherton, 2005; Morgan, 2010). Ultimately, this experience has the ability to slowly produce improvements in resilience (Torres et al., 2011), self-esteem (Montpetit & Tiberio, 2016) and self-efficacy (Forgeard & Benson, 2019).

Interpersonal and social benefits. Participation in meaningful team sport or group-based activities can foster good mental health (Cruwys et al., 2013; Cruwys et al., 2014; Dingle et al., 2013), prevent episodes of relapse in the process of recovery (Best et al., 2011; Best et al., 2012), bolster a person's relational well-being (Eime et al., 2013; Hall, 2011; Holt et al., 2011), and produce positive social outcomes for high-risk populations (Eggleston, 2000; Macniven et al., 2019). Focussing specifically on outcomes reported by Australia's indigenous population, Macniven and associates (2019) recently reviewed the evidence for interpersonal and social improvements following participants in sport or other physical activities taking place within a group-based setting. Activities and programs included in the review were delivered in various settings (e.g. schools, community centres) and environments

across Australia (e.g. urban, remote). The authors found that most studies reported positive outcomes across social health domains such as employment, education, crime reduction, social and emotional wellbeing, life skills, and culture. The authors thus recommended group-based sports or other activities as a useful intervention strategy for bolstering the social well-being and functioning of youth and adults.

Technically, surfing falls under the category of 'informal lifestyle sports' (Gilchrist & Wheaton, 2016; Gilchrist & Wheaton, 2017), defined as "informal and thrill-seeking urban and rural sporting activities that are qualitatively different to traditional, rule-bound, competitive and institutionalised sport" (Gilchrist & Wheaton, 2017, pp. 7-8). Unfortunately, research on the interpersonal and social benefits of participating in informal lifestyle sports, such as surfing, is lacking and is mostly anecdotal (Gilchrist & Wheaton, 2017). Thus far, qualitative research has revealed that informal lifestyle sports, such as surfing, do provide individuals with an opportunity to socialise outside of the home, connect with others in the relevant spaces (e.g. skatepark or ocean), and can provides a strong sense of identity and belonging to a group (Brown, 2016; Gilchrist & Wheaton, 2017; Taylor & Khan, 2011; Wheaton et al., 2017). The interpersonal benefits associated with surfing as therapy, are well documented, however. These outcomes will be discussed later in the chapter.

Positive risk-taking. To take a risk is to act without knowing the outcome of one's behaviour (Crone et al., 2016). Although 'risky behaviour' is generally perceived as negative, Duell and Steinberg (2019) explain that risk-taking falls on a spectrum: one side representing positive risk (e.g. learning to snowboard; positive because it is legal, socially acceptable or constructive) and the other

side representing negative risk (e.g. stealing a car; negative because it is harmful and not socially desirable or constructive). Unfortunately, there is still a scarcity of research regarding the former (Duell & Steinberg, 2019). However, thus far it is understood that young people are more inclined to take both positive and negative risks as a part of their psychosocial developmental stage (Erikson, 1968). In addition, youth who enjoy positive risk-taking may also be given to activities that involve negative risk (Rutten, et al. 2007; Veliz et al., 2015), as both may appeal to sensation-seeking individuals (Fischer & Smith, 2004; Hansen & Breivik, 2001; Mallet & Vignoli, 2007). Researchers have also theorised that simultaneously limiting opportunities for negative risk taking (e.g. drug use) ***and*** creating opportunities for positive risk taking (e.g. adventure activities or extreme sports) may be an effective strategy for decreasing youth's propensity toward negative risk taking, as well as the social costs associated with this (D'Silva et al., 2001; Figueredo & Jacobs, 2010).

Duell and Steinberg (2019) have argued that positive risk-taking should be encouraged, as it can assist youth in developing socio-emotional competence, personal responsibility, mastery, autonomy, perseverance and goal setting. It may also help young people meet their need for risk-taking in a safer way (Erikson, 1968; Gardner & Steinberg, 2005; Romer, 2010; Crone et al., 2016). In surf therapy, cathartic (stress reduction, spiritual experience, respite) and aesthetic (immersion in natural beauty) motivations are harnessed most frequently. However, both Stranger (1999; 2001) and Farmer (1992) have argued that competitive (man against self; man against nature) and vertigo motives (disequilibrium, risk-taking) are also strong motivations for surfing, especially in men. Clearly, the latter motivations should absolutely be harnessed in surf therapy with high-risk males (Figueredo & Jacobs, 2010). In fact, Duell and Steinberg's

(2019) criteria for positive risk-taking fits the activity of surfing well. Firstly, surfing is legal and socially acceptable, even socially desirable. Secondly, the likely risks associated with the activity, such as unpredictable swells, shark encounters, small injuries, anxiety, or failure are well managed by co-ordinators and the consequences of these are considered mild in severity. Thirdly, despite these risks, surfing boasts numerous physical, social, spiritual and psychological benefits. In light of this, it is evident that surfing and surf therapy may have the unique ability to promote positive risk-taking in young people who are already predisposed to risky behaviour (Diehm & Armatas, 2004; Farmer, 1992; Hignette et al. 2018).

The 'blue care' effect. Evidence suggests that regular exercise is linked to many physical benefits (Bellocco et al., 2010; Lee et al. 2011; Lee et al. 2012). Exercise is also described as an essential part of maintaining and recovering mental health and well-being (Rosenbaum et al., 2015), as it can lower psychophysiological reactivity to mental stress (Norris et al., 1990; Norris, et al., 1992), improve affect (Anderson & Brice, 2011; Berger & Motl, 2000; Hoffman & Hoffman, 2008) and alleviate symptoms related to depression (Schuch et al. 2016), PTSD (Hegberg et al., 2019; Whitworth & Ciccolo, 2016), and anxiety (O'Connor et al., 2000). According to previous research, exercising in "green spaces" (e.g. urban parks, open countryside, woodlands) has consistently produced greater effects on mental well-being than exercising in indoor spaces (Barton & Petty, 2010; Coon et al. 2011; Mavoa et al., 2019; Pretty et al., 2005). However, the combination of exercise and natural water environments seem to boast even greater benefits (Barton & Pretty, 2010; Britton et al., 2020; White et al., 2010). This occurrence has been coined the 'blue gym phenomena' (Caddick et al., 2015b; Depledge & Bird, 2009; White et al., 2016).

Taking this a step further, utilising the “blue gym” (e.g. ocean swimming, surfing, kayaking), within an intentionally therapeutic context, has recently been termed ‘blue care’ by Britton and his associates (2020). According to Britton and Foley (2020), surf therapy is one activity that falls under the category of ‘blue care’. In fact, it is currently the most commonly utilised form of ‘blue care’ (Britton et al., 2020). Wallace Nichols (2014), a surfer-researcher residing in the US, may have provided two additional explanations (that is, apart from accessing flow and experiencing mastery) for the positive health outcomes observed in relation to surf therapy as a form of blue care. Firstly, Nichols has proposed that blue spaces have the ability to induce ‘blue mind’; a state of mind characterised by tranquility, mindfulness, life-satisfaction and unity with the natural environment (Nichols, 2014). He further proposed that blue mind can act as an antidote to ‘red mind’, our natural, more alert state, characterised by general vigilance, or at worst, stress, fear, and aggression (Nichols, 2014). Earlier and subsequent research on the effects of blue space on individuals’ ‘state of mind’ has supported this argument (Gascon et al. 2017; Nutsford et al., 2016; Völker & Kistemann, 2011; Wheeler et al., 2012).

Secondly, surfing is a highly demanding sport (Farley et al., 2018), bolstering cardiovascular fitness, shoulder and back strength (from paddling), as well as leg and core strength (from popping up and steering the board). Surfing also requires constant adaptation to swells, weather, and various coast lines (Britton & Foley, 2020). Nichols (2014) has argued that due to surfing encompassing a combination of substantial physical exertion, a tranquil natural water environment, and the exhilarating experience of risk-taking, it has the power to produce a potent neuro-chemical mixture of dopamine, endorphins, and adrenaline. Other research has supported the idea that frequent induction of this

neuro-chemical combination can greatly boost a person's short-term and long-term well-being (Fleischmann, 2011; Pittsinger et al., 2017). For example, Pittsinger and colleagues (2017) recently conducted a study on exercise-induced mood changes following a bout of surfing with a Southern Californian sample of 107 participants. The authors found that a mere 30-minute bout of surfing produced statistically significant improvements in their research participants' mood, levels of fatigue and feelings of tranquility. In summary, it is apparent that surf therapy programmes may boast the unique ability to improve the health and well-being of participants as a potent form of 'blue care'.

Spirituality. For many reasons, the discipline of psychology has shied away from the investigation of that which is spiritual, mystical or religious in nature (Pargament, 2007; Pargament et al., 2013). However, this started to change with the introduction of Positive Psychology, which is the study of human flourishing (Compton & Hoffman, 2019; Famador et al., 2020). For many people, spirituality, and maintaining spiritual well-being is an important component of their overall health (Pargament, 2007; Pargament et al., 2013). Currently, the terms "religion" and "spirituality" do not have clear and agreed-upon definitions in psychology (Oman et al., 2018). However, the definition of spirituality as "the search for the sacred", as popularised by Pargament and Mahoney (2009), is widely used today (Famador et al., 2020). The term "sacred" is not restricted to personal or impersonal higher powers, but can be applied to all aspects of life (e.g. birth, marriage, nature, the arts) in which divine-like qualities can be perceived (Pargament et al., 2013). Such qualities might include 'transcendence', 'ultimacy', 'boundlessness', or 'mystery', and may also extend to inanimate objects — such as a surf board imbued with a blessing from a village priest (Warshaw, 2010). Research has repeatedly found that 'a search for the sacred' by way of ***any***

spiritual practice can reduce stress (Tuck et al., 2006), foster a higher quality of life (Baker, 2003), and produce a greater sense of purpose, meaning, direction (D'Souza, 2007; Tirri & Quinn, 2010), strength, and vitality (So, 2009). Interestingly, experiencing self-transcendence, a feeling often reported by surfers, has been linked to higher self-esteem and spiritual groundedness (Coward, 1996).

Surfing and secular spirituality. The spiritual terminology in which the experience of surfing is described sets it apart from other sports that have been utilised for youth development (Wheaton et al., 2017). For example, anecdotal and academic descriptions of surfing include reports of communion with nature (Farmer, 1992; Ford & Brown, 2006; Stranger, 1999; Warshaw, 2010), spiritual groundedness (Fuchs & Schomer, 2007; Ishiwata, 2002), Zen (when the sense of 'separateness' from other people and the natural world falls away, leading to feelings of complete tranquility and unity with all things; Ford & Brown, 2006; Malloy, 2004; Yogis, 2009) and transcendence (Amrheim, et al., 2016; Taylor, 2007; Kerby, 2010; Wheaton et al., 2017). In light of this, it is not surprising that Levin and Taylor (2011) found that seventy-five percent of surfers sampled within California expressed notions of connection with God, nature, and the universe, after riding a wave on the ocean. Academic-surfer Bron Taylor (2007) even goes as far as describing surfing as the "new aquatic nature religion". Indeed, many writers have pointed out an overlap of ideology in indigenous and Buddhist spirituality and that of the 'soul surfer' (Allen, 1997; Bleakly, 2016; Kerby, 2010; Taylor, 2007; Yogis, 2009). In their investigation of 'mystical and sublime' experiences in extreme sports, including big wave surfing, Watson and Parker (2015) argued that regardless of the framework in which these experiences are discussed (e.g. spirituality, peak experience, zen, flow), "they can be legitimately

grouped together with mystical and religious experiences…" (p. 261) because of their ethereal and transcendental undertones. It appears that although the spiritual practices and traditions have been severed from the modern-day act of surfing in places outside of Hawai'i, their roots remain — almost inescapable — only spoken about from the lens of different tradition.

It is proposed that surfing may offer a vehicle through which young people can maintain their sense of spiritual well-being. Research suggests that spirituality should be particularly fostered in young people who have had to overcome and create meaning out of the various adverse experiences in their lives (Baker, 2003; Davis et al., 2003; Tirri & Quinn, 2010). For example, Davis and colleagues (2003) found that higher scores on the Spiritual Well-Being Scale (Ellison & Smith, 1991) were associated with a reduction in state and trait anxiety in at-risk youth residing in Arizona. In another US-based study, Cotton and associates (2004) reported that spiritual well-being can protect against depressive symptoms and harmful risk-taking behaviors in young people. More recently, Kyle (2013) found that undergraduate students who have healthy spiritual beliefs may have a reduced risk for suicide when faced with adverse life circumstances due to protective factors such as social support, less damaging coping skills, meaning making, moral objections to suicide, and religious well-being. These findings strongly support the use of surfing as a spiritual well-being tool with high-risk youth.

Surfing and Māori spirituality. A traditional Māori interpretation of the term "spirituality" is much more than a mere "search for the sacred". Instead, Māori spirituality has been grounded in centuries of tradition, customs and culture, as with other indigenous groups in Australia and Northern America (Penehira et al., 2011; Ripikoi, 2015; Tse et al., 2005; Valentine, 2009; Valentine et al., 2017;). From

a traditional Māori perspective, a person's spiritual well-being is the ultimate, fundamental, and most paramount aspect of wellbeing (Cram et al., 2007; Durie, 1985; Ihimaera, 2004; Jones, 2000; Kingi, 2002), as it permeates every facet of one's life (Moeke-Maxwell, 2014; Pihama, 2001). The Māori word 'wairua', used to connote the concept of spirit or soul, is exceedingly expansive and complex (Penehira et al., 2011; Ripikoi, 2015; Valentine, 2009; Valentine et al., 2017), affecting and being affected by everything in existence — seen and unseen (Pere, 1997). From a literal perspective, Pere (1997) explains that the joining together of 'wai' (water) and 'rua' (two) in 'wairua' denotes the intertwining of, and the inseparability of the spiritual and physical realm in which a person dwells. According to this perspective, then, all things, animate and inanimate, have a sacred quality, and a life force, known as 'Mauri' (Durie, 2001; Moeke-Maxwell, 2014; Penehira et al., 2011; Walker, 2004). Consequently, spirituality from an indigenous perspective fore-mostly requires a deep awareness of and respect for the interconnectedness of human beings, animals, tīpuna, higher powers and the natural environment (Milroy, 2004). Without this awareness, and acting in alignment with this awareness, a person cannot achieve a sense of spiritual, relational, physical or psychological health (Cram et al., 2007; Durie, 2001).

The spiritual significance of access to, respect for, and engagement with the natural environment is of relevance to surfing and surf therapy with indigenous youth in New Zealand. Firstly, the Māori term for New Zealand's indigenous people is 'tangata whenua', meaning "the people of the land". The word 'whenua' is also used for 'placenta'. This communicates Māori people's fundamental bond with the land of New Zealand. Māori have traditionally aligned themselves closely with the natural world (Harmsworth et al., 2016). The relationship is reciprocal: humans offer care, reverence and respect, and nature provides healing,

knowledge and understanding in return (Durie, 2001). In light of this, spending time in nature, is considered a vital source of spiritual well-being.

Theoretical links between spiritual well-being and surfing, in the case of Māori youth, can also be explained through two additional concepts, namely, whakapapa and tūrangawaewae (Kēpa, 2007). Tūrangawaewae is a combination of the word tūranga (standing place) and waewae (feet) and can be understood as 'a place where one's feet can stand secure'. It is a region or location where one will always belong through kinship (Kēpa, 2007). One's tūrangawaewae is given at birth by way of whakapapa (lineage; Kēpa, 2007). Whakapapa is a cornerstone of Māori identity and provides structure to the unseen (spiritual) and seen (physical) world. Whakapapa not only includes the names of parents and grandparents, but of place: one's land, mountain, river or ocean (moana). According to tradition, frequent contact with areas that are considered part of a person's tūrangawaewae, through whakapapa, can be an additional and powerful source of spiritual and familial well-being (Rua et al., 2017).

In summary, surf therapy programmes can provide an additional time and space in which indigenous youth may reconnect with the natural environment, and locations that carry ancestral significance to them (Durie, 2001; Rynne, 2012; Wheaton et al., 2017). This in turn, can bolster their sense spiritual well-being (Durie, 1985).

Surf Therapy Outcomes

Research in the field of surf therapy has grown exponentially in the last decade, with around 25 articles and dissertations published between 2010-2020. The following section will outline the physical and somatic, interpersonal, behavioural and intrapersonal outcomes attributed to surf

therapy programmes around the world. Appendix E contains a table of the studies mentioned in the following section, including each study's location, structure, components, programme length, research design, and measures utilised.

Physical and somatic outcomes. As mentioned previously, surfing is a demanding physical activity that can greatly assist in improving a person's overall fitness and strength. The investigation of physical outcomes in this field have mostly been conducted with children who have physical and cognitive challenges. Regarding this population, researchers have found significant pre- to post-test increases in upper-body strength, core strength, lower body flexibility, cardio-respiratory endurance, and bone mineral density, as well as significant reductions in fat-free mass and total percent body fat (Armitano et al., 2015; Clapham et al., 2017; Clapham et al., 2020). Parents have also reported improvement in their children's balance and stamina, as well as sleep patterns (Moore, et al. 2018). Interestingly, in studies incorporating a control group (unstructured aquatic play) as well as an experimental group (surf therapy), Clapham and colleagues (2017; 2020) found no significant differences in physical outcomes. However, levels of self-confidence had significantly increased only in the experimental group. This is likely because surfing involves skill mastery, whereas unstructured aquatic play does not. On the other hand, Van Ewijk and her colleagues (2020) reported no significant changes on the physical well-being sub-scale of the KIDSCREEN-27 questionnaire (K-27; Ravens-Sieberer et al., 2007). This was not surprising, however, as other programme evaluations within this population included almost double the amount of total surf sessions. Physical fitness and physical well-being are also slightly differs constructs. A trend

toward significance was reported by Van Ewijk et al. (2020), indicating that the physical benefits associated with surfing are cumulative.

Furthermore, in a case study involving a soldier with various psychological and physical health conditions, Fleischmann and colleagues (2011) found clinically meaningful somatic and physical changes following six months in a US-based surf therapy programme. The participant demonstrated notable improvements in walking and balancing, as well as an increase in muscular strength and aerobic endurance. The participant also reported temporal relief from TBI symptoms, depression, and a reduction in his use of narcotics for pain relief.

Investigations of pre- to post-test changes in physical fitness and well-being in at-risk youth have revealed similar outcomes. For example, many researchers have reported an improvements in youth's over-all fitness (Devine-Wright et al., 2020), cardiorespiratory endurance (Hignett et al., 2018), increased satisfaction with physical appearance (Godfrey et al., 2015; Hignett et al., 2018), and increased interest in other physical activities available in their community (Matos et al. 2017; Morgan, 2010; Parsons, 2018).

Interpersonal outcomes. Although surfing may be thought of as a solitary sport, the interpersonal benefits associated with surf therapy programming have been described by participants as the most salient and enduring. For example, both veterans and active duty members have reported that their respective programmes have provided them with a renewed sense of camaraderie, an emotional and physical "safe space" in which their suffering is validated (Caddick et al., 2015a; Caddick et al., 2015b), and a place where "failure" does not exist (Marshall et al., 2020). The

concept of a safe space as well as a sense of belonging was also echoed by marginalised youth in Godfrey et al.'s (2015) and Marshall et al.'s (2019) evaluations of 'The Wave Project' in the UK, and by youth 'at-promise' in Sarkisian et al.'s study (2020).

Adding to this, Matos and her collegues (2017) found that their sample of Portuguese foster children demonstrated a significant increase in social competences as measured by the Strengths and Difficulties Questionnaire (SDQ; Goodman et al., 1998) following attendance in the Surf Salva programme. Participants also reported more positive relationships with adults and an increased sense of social inclusion. These findings were also echoed by Hignett and associates (2018), who found that 'Surf to Success' participants demonstrated significant pre- to post-intervention improvements in their behaviour toward other peers and teachers.

In regard to individuals diagnosed with cognitive and physical disabilities, Cavanaugh and Rademacher (2014) examined the effectiveness of a two-day surf camp (which included group-based events and activities as well as a social skills curriculum) to improve the social functioning of children with ASD. Following the surf camp, participants showed significant improvements on the Assertion, Responsibility, and Engagement domains on the Social Skills Improvement System (Gresham & Elliott, 2008). Also investigating the effects of a surf therapy programme on adults diagnosed with ASD, Parsons (2018) reported that the majority of his research participants described a sense of belonging and relatedness, as well as developments in their social self-efficacy. These descriptions corresponded with the increase Parsons (2018) observed in the Social Relationships domain of the World Health Organization Quality of Life Scale (WHOQOL, 1998).

Consistent with these outcomes, Van Ewijk and associates (2020) also found significant improvements in peer relationships at school, as well as a trend towards significance in parental relationships.

Behavioural outcomes. Behavioural improvements associated with surf therapy programming is somewhat scant, however, findings have been promising in regard to at-risk and high-risk young people. For example, Hignett and her research team (2018) reported that graduated 'Surf to Success' participants demonstrated more pro-social behaviour during school times, as reported by participants' teachers. General improvement in adolescents' behaviour and self-management was also reported by Devine-Wright and colleagues (2020) and Morgan (2010). Adding to these findings, Matos et al., (2018), Snelling (2015), and Gomes et al., (2020) all utilised the SDQ in their respective investigations of behavioural improvements in their research samples. Most recently, Gomes and colleagues conducted a six-year longitudinal study on a three-year, family-inclusive surf therapy programme for at-risk minority youth in Portugal. The SDQ questionnaire was completed by the 'SURF.ART' 'technical team'. Findings indicated, at the end of the third year, that participants' General Difficulties, as measured by totaling the scores of the Emotional, Peer, Conduct and Hyperactivity Difficulties sub-scales had significantly decreased, producing a large effect size for the programme (0.74). Significant improvements were also observed on the 'Pro-social Behaviour' sub-scale, which served as an indicator of psychosocial adjustment. In their study, Matos et al. (2017) also found significant pre- to post-intervention improvements in General Difficulties, and on the Behavioural Problems sub-scale — according to both the participants (self-report) and tutors from relevant institutions (other report). In contrast to

these findings, however, Matthew Snelling's (2015) programme evaluation of 'Waves of Change' in South Africa demonstrated no significant changes in participant behaviour as measured by the SDQ, or the Social and Health Assessment Scales (Rushkin, Schwab-Stone,& Vermeiren, 2004). It should be noted, however, that this was speculated to be largely due to incomplete attendance by participants, a lack of program fidelity by coaches, and misunderstandings/lack of literacy in programme participants.

Intrapersonal outcomes. Naturally, a large percentage of studies have sought to establish the effects of surf therapy on psychological well-being and functioning. Research on active duty members and veterans with PTSD have reported promising outcomes. For example, qualitative studies have revealed that surfing reportedly 'quiets' PTSD symptoms, provides relief from ruminating on the past, assists veteran's in becoming present, and promotes hope for the future. This "shifting time sense" (p. 81) is likely due to accessing a state of flow whilst surfing. Regarding quantitative research, Carly Rogers and colleagues (2014) conducted a single group pretest–posttest investigation on an 'Ocean therapy' intervention, which aimed to utilise surfing as a vehicle to edify and support veterans in their transition to civilian life. Following graduation from the intensive 5-week programme, the veterans demonstrated clinically meaningful improvements in both PTSD and depressive symptoms. Walter and her associates (2019) reported similar findings in their sample of 74 war veterans attending the Surf Clinic in San Diego. Utilising a single-group longitudinal design with repeated measures, researchers investigated both post-programme, and post- surf-session effects. They found that after each surf session, depression and anxiety symptoms significantly lessened and positive affect significantly improved.

They also found statistically significant pre- to post-intervention changes in symptoms of depression, anxiety, PTSD, negative affect and positive affect. These findings are insightful because the latter programme's structure (Surf Clinic; Naval Medical Center) was not nearly as intensive as the former (Jimmy Miller Memorial Foundation), which included learning modules and focussed group discussion. This suggests that the activity of surfing — and its unique therapeutic features — might be a chief source of mental and emotional restoration. Alternatively, although Crawford's (2016) study did find a significant reduction in PTSD symptoms as well as a significant increase in self-efficacy at both post-intervention and 30 days following intervention, it did not report significant changes in depression scores at either time interval.

Research pertaining specifically to at-risk or high-risk youth has also revealed promising outcomes concerning intra-personal functioning. For example, Godfrey and colleagues (2015) reported statistically significant improvements in their participants' overall well-being. In addition, Matos et al. (2017) reported significant improvements on the Emotional Problems sub-scale of the SDQ, as reported by programme staff and tutors. Furthermore, investigating outcomes in youth 'at-promise' attending the Jimmy Miller Memorial Foundation programme in California, Sarkisian et al. (2020) recently found that participants demonstrated statistically significant increases in feelings of hope (Snyder et al. 1997) after a mere day of surfing and socialising with peers and volunteers. Regarding qualitative findings, Harris' (2015) phenomenological study revealed that surfing had greatly assisted her research participants to re-connect with their own bodies, and to experience a child-like joy and pleasure that they had felt eluded them in their adult lives — something they began to pursue through drug use. Participants

also described surfing as immensely empowering, providing a renewed sense of self-efficacy in both abstinence from drugs and alcohol and life in general.

Reports of increased self-efficacy is extremely common in surf programme evaluations. It is theorised that the combination of mastery and social support contributes greatly to this (Crawford, 2016; Harris, 2015; Marshall, et al. 2019; Marshall et al., 2020), as well as the innumerable reports of increased self-confidence (Clapham et al., 2018; Devine-Wright et al., 2020; Harris, 2015; Moore et al., 2018), self-esteem (Godfrey, et al., 2015; Devine-Wright et al., 2020; Van Ewijk et al, 2020), self-worth (Devine-Wright et al., 2020; Hignette et al., 2018) and self-determination (Parsons, 2018). This gradual change in self-concept through the act of learning how to surf was perfectly exemplified in one veteran's statement: "I didn't think I would stand up [on the board], and I did. I wonder what else I can do?" (Rogers et al., 2014, p. 400).

Other findings. Researchers have also reported other outcomes that are especially pertinent to high-risk adolescents and young adults with dysfunctional backgrounds. For example, Morgan (2010) stated that the 'Sunset Surfers' programme was a helpful tool for drawing vulnerable youth to an activity that was highly enjoyable and 'risky', but that took place in a controlled environment with positive peers and adults. In addition, both Godfrey et al. (2015) and Hignett et al. (2018) reported positive educational outcomes following participant involvement in their respective programmes, including advancement and engagement in classes, an increase in pro-social behaviour at school, as well as a greater connectedness to, and a more positive attitude towards school. Lastly, Harris (2015) found that some

participants described surfing as a gateway to spiritual re-awakening. For example, one participant stated that “although she did not believe in God per se…while surfing, she felt a certain communion with spirit” (p. 37). Another participant expressed that he had found a “new connection to his previous religion” (p. 36) while surfing. Thus far, she is the only researcher that has reported on the spiritual outcomes related to surf therapy.

Surf therapy as Community-based Adventure Therapy

The theoretical framework for surf therapy is still under investigation (Benninger et al., 2020). However, the ways in which surf therapy fits into CB-AT programming indicate that AT literature is well able to theoretically support and lend understanding to this developing field in regard to participant outcomes and mechanisms of change (Gomes et al., 2020).

Firstly, it is clear that there are many similarities in structure and components. For example, surf therapy takes place in nature, involves naturally-occurring obstacles (e.g. waves), requires personal development and/or mastery in order for success to occur, and involves group work guided by kinaesthetic metaphor. Many surf therapy programmes also include learning modules (e.g. Cavanaugh & Rademacher, 2014; Gomes et al., 2020; Rogers et al., 2014), skills practice (e.g. Harris, 2015; Matos et al., 2017; Parsons, 2018), focussed group discussion (Rogers et al., 2014, Marshall et al., 2020), personal reflection (Gomes et al., 2020; Snelling, 2016; Sarkisian et al., 2020) and one-on-one therapy (e.g. Harris, 2015).

Surf therapy also incorporates many of AT’s key therapeutic features. For example, surf therapy does not look like traditional “therapy”, takes place on ‘neutral ground’ (Harris, 2015), provides respite and distance from daily

stressors in participants' lives (Marshall et al., 2019; Morgan, 2010; Snelling, 2015), is strengths-based (Gomes et al., 2020; Marshall et al. 2019; Sarkisian et al., 2020) and is developmentally relevant to at-risk young people (Hignett, et al., 2018).

Lastly, the foundational theories that underpin AT are also eluded to or named in surf therapy literature, including cognitive-behavioural theory (e.g Harris, 2015), systems theory (e.g., Godfrey et al., 2015; Gomes, et al., 2020; Snelling, 2016), psychodynamic theory (e.g. Harris, 2015), self-determination theory (Gomes, et al., 2020; Marshall, et al., 2019; Marshall et al., 2020; Parsons, 2018), Bandura's theory of self-efficacy (Crawford, 2016; Harris, 2015; Marshall et al., 2020; Rogers et al., 2014), and experiential learning theory (Gomes, et al., 2020).

Based on these similarities and overlaps, it is argued that surf therapy should be viewed as a form of CB-AT, and that future research may comfortably draw from AT theory in order to understand participant change, and the mechanisms associated with these changes.

Surf Therapy in New Zealand

Surf therapy programming in New Zealand has become more common over the last four years. In 2020, surf therapy programmes provided in New Zealand consisted of *Restoke* (adult mental health), *Wavewise* (adult and youth mental health), *Surfing for Farmers* (farmer well-being), *Tai Wātea* (high-risk, mostly Māori, males), and *Onewave* (youth mental health). All of these programmes are yet to be externally evaluated for their effectiveness in producing desired outcomes.

Based on the world-wide success of surf therapy to improve the physical, behavioural, social and emotional functioning of individuals with various challenges, it is hypothesised that a surf therapy intervention for high-risk males in New Zealand could also be effective in producing these outcomes. Investigating this hypothesis would be of great value to health practitioners, young people at risk of adverse outcomes, their families, and their community. In light of this, a description of the Tai Wātea programme and the specific research focus will be provided in the following chapter.

Conclusion

This chapter has briefly outlined the history of surfing, as well as its relevance to the utilisation of surf therapy with Polynesian youth in New Zealand. Therapeutic features that may contribute to the effectiveness of surf therapy within a variety of populations, such as accessing a state of flow, regaining a sense of mastery, and positive risk-tasking, were then discussed in detail. Flowing on from this, the physical, somatic, interpersonal, behavioural and intra-personal outcomes associated with surf therapy programming around the world were discussed. Surf therapy was placed under the larger umbrella of CB-AT, due to obvious overlaps in programme structure, components, features and theoretical underpinnings. It is the researcher's belief that doing so may provide additional insight concerning the therapeutic outcomes that participants commonly report, as well as possible mechanisms of change. The chapter concluded with a brief description of surf therapy programming in New Zealand as it currently stands, and the great need for programme evaluation — especially that of the Tai Wātea surf therapy programme, which aims to improve various domains of functioning in young high-risk males in Aotearoa.

Chapter Four

Tai Wātea Surf Therapy Programme

Introduction

Research suggests that surf therapy is a unique and effective tool for improving participants' physical, emotional, behavioural, and social functioning. This is true for a variety of vulnerable populations. Therefore, it is argued that surf therapy may be a promising new approach for reaching, retaining and supporting positive functioning in the lives of high-risk males in New Zealand. The Live For More Charitable Trust (LFM) provides an eight-week surf therapy programme for high-risk young men in Mount Maunganui, Tauranga. The chapter provides an overview of this programme, a description of the its main components, and a brief outline of the programme's theoretical underpinnings. The chapter concludes with the specific research focus of this project, namely to evaluate the effectiveness of the programme in improving the functioning of participants.

Programme Overview

LFM is a non-profit organisation based in Tauranga, Bay of Plenty. It is estimated that almost a quarter of New Zealand's high-risk youth reside in this region (Ball et al., 2016). The organisation provides an eight-week surf therapy programme called 'Tai Wātea', specifically aimed at young (predominantly indigenous) men between ages 16-25, who are caught up in a lifestyle of crime, gangs, drugs, and alcohol. The Tai Wātea programme incorporates all the characteristics of AT, discussed in chapter two (e.g. does not fit the typical image of "therapy", involves naturally-occurring obstacles, kinaesthetic metaphor, focussed group discussion, personal reflection, one-on-one therapy), as well as

the proposed therapeutic characteristics of surf therapy, discussed in chapter three (e.g. flow, mastery, positive risk-tasking, the 'blue care' effect, spiritual re-awakening). Unlike traditional AT or WT programmes, which typically remove participants from their everyday surroundings (see Eggleston, 2000), Tai Wātea works with youth inside their 'real world environment'. In this way, Tai Wātea may be regarded as a form of CB-AT.

It is estimated that most participants have experienced one or two ACEs, and that more than half of participants would have experienced four or more ACEs in their lifetime (Felliti et al., 1998). At referral, participants are often already experiencing or are at a high risk of experiencing all four poor outcome categories outlined by the New Zealand Treasury (Ball et al., 2016); typically presenting with a combination of anti-social behaviour, substance misuse, disengagement from work and study, and low physical, mental and relational health. Tai Wātea is designed to attend to all of these inter-related challenges simultaneously, by addressing underlying issues related to participants' sense of self-worth, love and belonging, purpose and self-efficacy. Although participants are generally unwilling to engage in "therapy" to resolve these issues, they are prepared to spend time with the 'the boys' (other young men they have come to know through their lifestyle), share some kai (food), connect with their moana, and try out a fun new activity. Thus, LFM utilises surfing as a therapeutic tool to first engage and then initiate and maintain positive change in participants' lives.

It is important to note that surfing is the foundational component of this intervention. Surfing 'reaches the unreachable', bolsters participants' mastery and self-efficacy, connects indigenous youth with nature and their tūrangawaewae, and establishes positive and supportive relationships with clinicians and other participants. It also provides powerful kinaesthetic metaphors for vital lessons

around momentum (getting unstuck), potential, and perseverance. While surfing, participants experience the momentum of a wave. The additional components, (e.g. counselling, mentoring, graduation ceremony) help participants to get unstuck and start moving in a positive direction in their every-day lives (empowerment). Secondly, while surfing, participants uncover their hidden potential to master a new skill. The additional components help participants to discover, utilise and master other unrealised talents and to use these within their community (purpose). Thirdly, great perseverance is required in order to master the act of surfing. The additional components teach and support participants to persevere in and achieve other pro-social goals — despite the numerous challenges that arrive (self-efficacy). All components are enveloped in a spirit of aroha (affection, love, compassion) and whānaungatanga (a family-like connection developed through shared experiences, goals and values), which acts as one of the most powerful therapeutic components (Huriwai et al., 2001).

It is theorised that (1) the physical act of learning how to surf, (2) the additional programme components (e.g. counselling), and (3) the unconditional positive regard and support from staff, volunteers, and other participants, work together to improve participants' overall sense of self-worth, sense of belonging, purpose, and self-efficacy, resulting in improved levels of psychosocial functioning. Psychosocial functioning is defined as a person's ability to contribute positively to their community, to effectively engage in and complete the various activities required for daily living, and to maintain fulfilling and positive relationships with other people (Hopkins et al., 2014). Ideally, improved psychosocial functioning will lead to re-engagement in meaningful work, study or training. LFM's ultimate goal is to assist participants in avoiding poor long-term outcomes (Ball et al., 2016) and breaking generational cycles of dysfunction

within families through this process of change that is initiated through attending the Tai Wātea programme. Figure 2 provides a visual representation of this process of change. This process is also clearly reflected in graduates' speeches (see Appendix F).

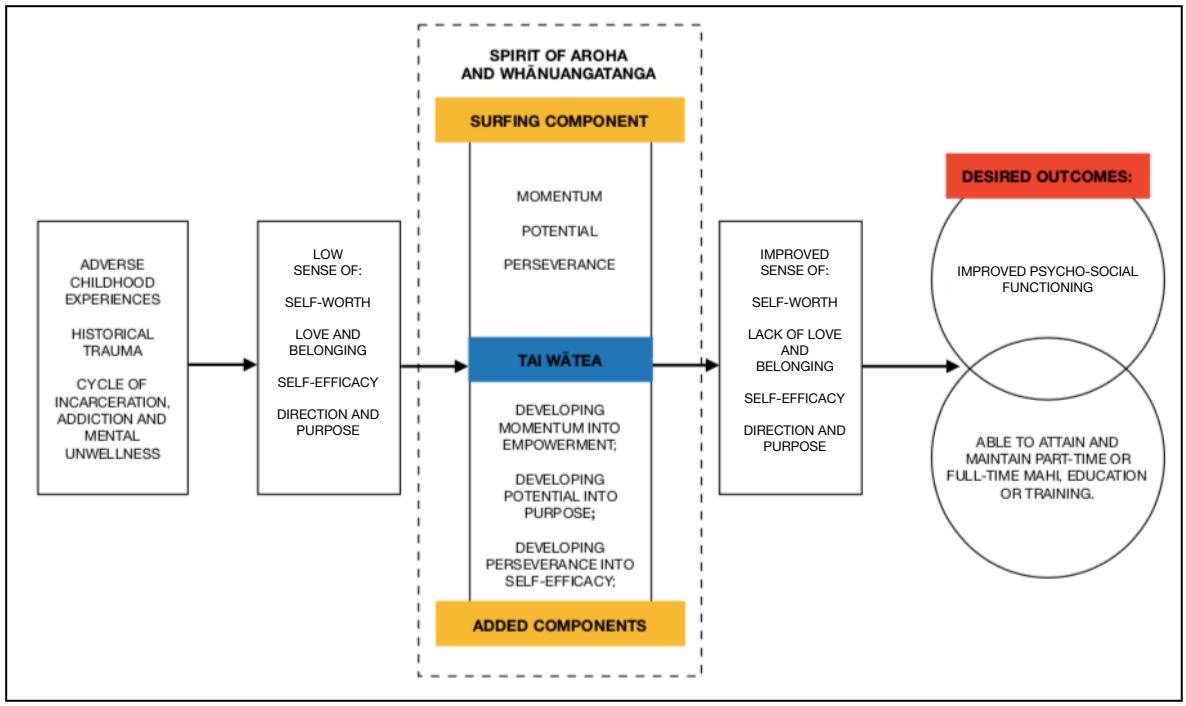


Figure 2. Hypothesised process of change in the Tai Wātea Surf Therapy Program.

Tai Wātea Programme Components

The Tai Wātea programme consists of three main components: participants attend the weekly surf programme days and receive an additional two hours of one-on-one support per week, in the form of one-on-one counselling, and one-on-one mentorship. Five additional programme components, namely, Tai Watea's 'Points System', 'Open Day', 'Graduation', 'Reward Day' and 'Tai Tautoko' will also be outlined.

Component 1: Weekly Surf Programme

The weekly surf programme takes place every Tuesday from 8:30 am-3:30 pm for eight consecutive weeks. Programme days include four main components: surfing, group work, cultural work, and guest speakers. A description of the programme daily schedule is provided below.

Pick-ups. The young men are picked up on Tuesday mornings based on the specific pick-up route and are rewarded with 'points' for being ready on time.

Touch rugby. Participants, staff and volunteers warm up and reconnect with each other by playing touch rugby.

Pre-surf circle. Staff, volunteers and participants form a circle on the beach and each person is given an opportunity to openly reflect on how they are feeling physically and psychologically on a scale from one to ten.

Surfing. After a karakia (prayer) offered by one of the participants, everyone surfs for 1 hour. During the surf, there is an intentional collaboration between volunteers in the community and participants. The collaboration aims to break down the in-group, out-group ideology that the young men may previously have experienced as Māori, as gang-members and as offenders.

Clean up. Participants practice teamwork and social responsibility through rinsing off and putting away surf boards, wetsuits and rash shirts when they arrive back at the LFM offices.

Shared kai. Staff and participants share food, talk together and laugh together. Participants clean up the dining area, wash dishes, and pack up left-over food for their whānua.

Surf debrief. Participants are given a chance to share their positive or negative experiences in the surf. Staff and participants look through the day's photographs, which is usually characterised by laughing and cheering for each other. Each week, one participant will be rewarded for "The Wave of the Day".

Cultural work. The "Cultural Genocide" (Marsden & Royal, 2003, p. 88) and racism that Māori have endured makes constructing a positive and coherent identity especially difficult (Haenga-Collins & Gibbs, 2015; Houkamau & Sibley, 2014; Walker, 2004; Ward, 2006). There is now a robust amount of literature that points to cultural-efficacy and a strong cultural identity as an antidote for this bewilderment, a protective factor against poor life outcomes and a source of well-being, resilience, quality of life (Brittain & Tuffin, 2017; Fox et al., 2018; Houkamau & Sibley, 2011; Houkamau & Sibley, 2015; Mead, 2016; Muriwai et al., 2015; Rua et al., 2017; Stuart & Jose, 2014; Walters & Seymour, 2017). In light of this, Tai Wātea aims to instill cultural pride and bolster cultural-efficacy in participants by helping the young men to practice te reo Māori and karakia, teaching them about their whakapapa, and supporting them in delivering their pepeha and performing a haka before their whānua and community. Of course, rangatahi Māori identify with and appreciate these practices to differing degrees (Houkamau & Sibley, 2011; Houkamau & Sibley, 2015; Fox et al., 2017). The cultural work component includes the following:

Pepeha. Pepeha is a way of formally introducing yourself in the Māori culture and is based on one's whakapapa (Te Rito, 2007). It places participants in their wider context and serves to link them to their tīpuna, whānau, and their ancestral land and waterways (e.g. their moana), as well as their traditional meeting places (marae) and tribal groupings (hapū and iwi; Te Rito, 2007). Participants typically vary in knowledge of their whakapapa and confidence in delivering their pepeha. At graduation, participants deliver their pepeha in front of their whānua and community. Most have never done public speaking in their lives.

Haka. Haka is classified as a genre of waiata (song or chant), and is considered a gateway to te ao Māori (Williams, 2008). According to Smith (2017),

during haka, “Mauri invigorates every movement, [every] contraction, […] every muscle in the body, and every flicker of the soul” (p. 13). Thus, haka is a culturally meaningful and spiritually infused activity (Kāretu, 1993). Every week, participants practice the words and the actions of ‘Tika Tonu’ and eventually choose a kaea (haka leader) for the performance at graduation. Originating from central Hawkes Bay, ‘Tika Tonu’ was composed by Waimarama Puhara, a highly respected chief, in the early 1900’s. The haka was originally written to encourage and direct his son, who was enduring personal suffering. This haka contains themes around struggle, hardship and perseverance, and thus, it is greatly suited to the young men and the aims of the Tai Wātea programme (Smith, 2017).

Group Work. The act of learning how to surf and becoming ‘a surfer’ is seen as a tangible and understandable analogy for life. Every week centres on a particular theme that relates to both the experience of surfing and to living life well. Each group session contains a teaching segment, time for personal reflection and an opportunity for participants to share their experiences in relation to the particular theme. Appendix G describes the weekly themes, the matching surf analogy and the learning objective for weeks one to eight.

Guest Speaker. Tai Wātea speakers commonly come from a background of addiction, violence, family dysfunction, gangs, or personal hardship. Speakers are selected based on their lived experience of the theme of the week. Participants are encouraged to approach any of the speakers as an additional mentor in their journey (Scales et al., 2006).

Awards. The “Tai Wātea Warrior of the Day” award is given to the participant,who has demonstrated exceptional levels of responsibility, perseverance, concern for others, or service on that day.

Review of goals. Participants openly select goals that they would like to achieve by graduation (e.g. becoming drug-free, attaining a driver's license, finishing community work hours, or finding employment). Participants rate their progress as: 0 — nothing done toward goal; 1 — something done toward goal; 2 — goal achieved. Participants encourage each other greatly and are inspired by each other's achievements.

Points review. Each participant's points are reviewed, with much excitement for the next reward. Especially pertinent in bolstering participants' sense of love of belonging, at 50 points participants receive a hoodie with Tai Wātea's logo on the back. This is referred to by participants as becoming "patched up" (a gang-related term) with Tai Wātea. This is a significant moment in participants' (gradual) construction of a pro-social identity. The points system can be viewed in Appendix H.

Highlights. Participants share their 'highlight of the day'.

Karakia. The day is concluded with a group karakia.

Drop offs. The young men are dropped back at home.

Component 2: Counselling

Krista Davis, a registered drug and alcohol counsellor, provides one-on-one counselling to participants. The counselling approach consists mainly of motivational interviewing theory and techniques in order to empower the young men to get "unstuck" in their current lifestyles, and gain momentum in a new direction. As discussed, motivational interviewing is a collaborative, nonjudgmental, and non-confrontational tool found to be effective with this population (D'Amico et al., 2013).

Component 3: Youth Navigation

The navigator's role is to assist the young men with the practicalities of exiting the justice system and/or accessing educational and occupational opportunities, positive leisure activities and other resources that can be drawn on in the construction of a pro-social identity and lifestyle. Participants may require transport for community work, probation or other appointments, support in finding stable accommodation, attaining their driver's license and birth certificates and assistance in writing a Curriculum Vitae. They may also need advocacy with court and probation, as well as with Work and Income New Zealand.

Another vital part of the navigator's job is to role model healthy and pro-social behaviour (Beier et al., 2000; Scales et al., 2006), as well as a masculinity that is culturally-grounded and free from the harmful dominant discourse around being a Māori male (Albright et al., 2017; Hokowhitu, 2007). It is therefore a requirement that the navigator role is filled by a Māori male who demonstrates a positive cultural identity, good cultural-efficacy, and exemplifies characteristics such as mana (integrity and dignity), māhakitanga (humility), hinengaro (intellect), manaakitanga (support and concern for others), aroha, wairua, and whānaungatanga.

Additional Programme Components

Points system: LFM incorporates a token economy, or "points system", into all their programmes and services. Participants earn points for practicing positive behaviours (e.g. being on time, getting to one-on-one's independently, finishing probation, completing a CV, passing a drug test), but may also have points deducted for breaking the programme's kaupapa (principles or policies; e.g. starting fights, smoking outside of smoke breaks, bringing drugs or alcohol to course). When participants have earned the prescribed number of points (e.g.

30, 50, 100), they qualify for specific goods and privileges (e.g. LFM paying for their licence, receiving a variety of Tai Wātea clothing items). In keeping with the larger goal of using a token economy, everything that the young men are rewarded or penalised for can be applied to the wider context of their lives and social role (Krasner, 2017). In addition, provided that token economies work on the accumulation of tokens (e.g. points), it is also an opportunity for the young men to practice patience, to plan ahead, and to manage impulsivity. In this way, Tai Wātea's points system acts as a dynamic 'life-skills training' tool, with one of the main messages being "Do the mahi (work), get the treats".

Open day. During Week 4 of Tai Wātea, clients go on an 'Open Day', where they are presented with work and course opportunities via TradeUp and EmployNZ. Following Open Day, the Youth Navigator supports them to engage with their desired organisation for work or education. As discussed in chapter two, increasing this populations life opportunity through engagement with education and work may be vital in reducing future offending, and ideally, breaking generational cycles of poverty and crime.

Graduation. The graduation ceremony takes place on the Friday following the final Tai Wātea surf programme day on Tuesday. Whānau, past graduates and other members of the community (including judges, mayors and policemen) gather together in great anticipation and support of the graduates. The graduation ceremony serves to honour participants' mana in the presence of their whānau and wider community, to affirm their new social identity (see Best et al., 2017) and growing sense of self-worth, and to celebrate their progress over the last two months.

Reward day. Following graduation, the graduates are rewarded for completing the programme. Reward day includes a day of motocross riding and burgers for lunch.

Tai Tautoko. Tai Tautoko (waves of support) is the on-going weekly programme for graduates of Tai Wātea. It includes a surf session, shared kai, a motivational speaker from the community, and group reflection. Tai Tautoko represents whānaungatanga, as it continues to provide graduates with a stable family-like community in which they can be continually strengthened and supported alongside other men who are on a similar journey. Participants still receive points after graduation for feats such as staying in employment for more than two months, attending and completing courses and completing community work hours. Many graduates work toward securing the top reward (a surfboard; 250 points). This taonga is a significant way of honouring graduates' progress and their new identity as a 'surfer'. It also encourages graduates to surf together or alone, as a positive coping strategy for when they encounter future challenges (Taylor & Stanton, 2007).

Theoretical Underpinnings

In addition to CBT (Beck, 1979; Ellis, 1962), experiential learning theory (Kolb, 1984), self-determination theory (Ryan & Deci, 2017), ecological systems theory (Bronfenbrenner, 1992), and self-efficacy theory (Bandura, 1977), described in chapter two, the Tai Wātea programme's design and delivery is also informed by the principles of operant conditioning (Skinner, 1938), trauma-informed practice (Oral et al., 2016), strengths-based practice (Norman, 2000), the social identity model of recovery (Best et al., 2016) and Durie's Te Whare Tapu Wha model of health (Durie, 1984).

Operant conditioning. Tai Wātea's token reinforcement (points) system is designed to motivate pro-social behaviour and discourage anti-social behaviour (Ayllon & Azrin, 1968). Based on the principles of operant conditioning (Skinner, 1938), token reinforcement systems are a widely used tool for behaviour modification, whereby target behaviours are systematically rewarded or punished through the adding or subtracting of "tokens" (e.g. points, gold stars, buttons) that can later be exchanged for desired goods (Hackenberg, 2018). According to Kazdin (2012), token economies are one of the oldest systems of reinforcement, pre-dating the scientific study of operant conditioning by as much as a decade. To date, numerous systematic reviews support the effectiveness of token economy systems across a number of settings and populations, including at-risk youth (Doll et al., 2013; Hackenberg, 2018; Ivy et al., 2017)

Trauma-informed practice. Research strongly suggests that high-risk young people are likely to have experienced a higher number of ACEs (Dong et al., 2004) than other youth, and that ACEs have major impacts on an individual's health and behaviour (Oral et al., 2016). In addition to personal trauma, the impact that historical events have had on the collective well-being of Māori form another layer of complex trauma around the lives of many participants (Pihama et al., 2017). This makes trauma-informed practice foundational to all aspects of the Tai Wātea programme as well as staff/volunteer—participant interactions. Tai Wātea demonstrates trauma-informed care by (Te Pou, 2018):

a) prioritising safety, confidentiality and trustworthiness;
b) thinking about 'what has happened to this person', instead of, 'what is wrong with this person';
c) being informed about trauma-related research relevant to high-risk youth;

d) being culturally sensitive and aware of the inter-generational effects of trauma;
e) reappraising symptoms or dysfunctional behaviour as adaptive, rather than pathological;
f) affirming the strengths and resources that participants have displayed and have developed through their experiences of trauma;
g) recognising the centrality of encouraging, positive and respectful relationships in trauma-recovery;
h) creating a safe space in which clients can tell their personal story, and be heard and supported through that expression.

Strengths-based practice. Tai Wātea participants have grown up in challenging environments, and have been exposed to multiple services that inherently require attention to lack, risk and problems (Berzin, 2010). Consequently, participants have developed a well-practiced focus on personal and environmental deficits, and the labels that accompany these (e.g. criminal, stupid, lazy, no-good). These labels permeate the psyche of participants, resulting in low self-worth, low self-efficacy, and defensiveness (e.g. Brittain & Tuffin, 2017). Unfortunately, such labels can act as self-fulfilling prophecies (Brittain & Tuffin, 2017; Johns, et al., 2017). In light of this, the Tai Wātea program places an overwhelming emphasis on every participant's strengths and potential (Sciaraffa et al., 2018; Tse, et al., 2016). A strengths-based approach is built on a commitment to first notice and attend to a person's capacity and then to attend to any lack or risk in their life (Scott & Wilson, 2011). It also assumes that every individual has the ability to steer their life in a direction that is meaningful and satisfying, despite their personal history or

current challenges (Rapp & Goscha, 2012). This approach permeates all programme components as well as all staff/volunteer—participant exchanges.

The Social Identity Model of Recovery and/or Desistance. The centrality of friends and community in the maintenance of change has been described by the social identity model of recovery (SIMOR; Best et al., 2016; Best et al., 2017). Although Best and his associates (2016) first defined the SIMOR model with recovery in mind (abstinence from substances), they (2017) later argued that this model could also be applied to rehabilitation (desistance from crime). This model frames the process of recovery and rehabilitation in terms of a gradual change in social identity. During this process, the fundamental part of an individual's identity shifts from being defined by membership to a group, whose values and norms centre around crime, gang activity, and substance use, to being defined by membership to a group, whose norms and values promote recovery or rehabilitation. Evidence for the centrality of social processes in psychological resilience (Arahanga-Doyle, 2019; Koni et al., 2019), recovery, and rehabilitation, can be found in several studies investigating drug and alcohol recovery (Best et al., 2011; Dingle et al., 2015), delinquency (Landale & Roderick, 2014), and gang affiliation (Pyrooz, 2014; Pyrooz et al., 2013; Radak, 2016; Tamatea, 2015). This model theoretically supports the importance of fostering a sense of whānaungatanga within Tai Wātea and Tai Tautoko.

Te Whare Tapa Wha Model of Health. Dr. Mason Durie's Te Whare Tapa Wha model (Durie, 1984) is holistic in its conceptualisation of human health. According to this model, well-being is achieved when there is a balance of all aspects of health (spiritual, relational, emotional, physical). This allows human potential and personality to flourish, and ultimately outworks itself in that

individual's community and context. The model likens a healthy person to a house with four strong walls. Consequently, it suggests interdependence between the aspects of health; if one wall is weak, it impacts upon the other walls, causing tension and risk of collapse. The four walls are outlined below.

Te taha wairua. As previously discussed, spiritual well-being is foundational to health, and is intertwined with whānau and the natural world. Adding to this, the maintenance of a person's mana, described as one's dignity or standing (Valentine, 2009), self-esteem, personal prestige (Durie, 2001), spiritual strength (Tate, 2010), or an inheritance of spiritual qualities from our ancestors (Henare, 1988), is an important facet of spiritual health (Ripikoi, 2015). Mana can be increased or decreased by our behaviours towards ourself, other people, and the land through either respect or violation of that which is tapu (holy; Valentine, 2009). Hence, traditional beliefs were that mental and physical illnesses were a consequence of 'wrong living', or a disconnect from the land, spirit, culture, whānau, and one's self (Valentine, 2009). Conversely, a healthy wairua is characterised by a stable identity, healthy relationships, peacefulness, mental/emotional balance, and contentedness with the land (Valentine et al., 2017). The Tai Wātea program honours and upbuilds participants' spiritual well-being through providing opportunities to connect with places of ancestral significance (Rua et al., 2017), to learn about and practise pepeha, haka, te reo and karakia (Houkamau & Sibley, 2011) and through respecting and attributing great value to the identity, potential and future of every individual — which is vital to increasing the mana of a person (Milroy, 2004).

Te taha whānau. The familial aspect of health recognises that our human nature and identity are inherently relational and social (Stuart & Jose, 2014). The collectivist orientation of Māori mean that each member within a family is

automatically situated within the narrative or reputation of their whānau, hapū and iwi (Durie, 1985; Durie, 2001). Thus, the first fruits of a person's identity derive from the trunk and limbs of their tribe and family tree. In light of this, the Tai Wātea programme includes the discovery of participants' whakapapa, the delivery of their pepeha and a celebration of the individual's success in the presence of their whānau and other members from their iwi.

Te taha hinengaro. This wall describes the emotional and mental aspect of well-being, which includes the ability to think, feel, and communicate. According to this model, mental and emotional health are fore-mostly about secure relationships and secure identity. These are mutually reinforcing: a secure sense of identity results in secure relationships and vice vera. As poor mental health may be attributed to unsatisfactory or dysfunctional relationships and an insecure sense of identity, one of the primary goals of the Tai Wātea programme is to foster a positive and strong identity and self-worth, and to encourage healthy relationships with others. The young men's confidence in communicating who they are, how they feel and what they think is developed exponentially at graduation, where they deliver their pepeha, a speech, and perform a group haka.

Te taha tinana. This refers to physical health, growth, and bodily care. According to Valentine et al. (2017), Western ideas around health and well-being are "guided by a reductionist, materialist philosophy" (p. 66), splitting the body and the mind, with little to no recognition of the spirit. This is at odds with Māori epistemology, which assumes that our physical health is interlinked with all aspects of our well-being (Durie, 2001). From an indigenous perspective, pain or issues in different parts of your body is our body communicating the state of our being: spiritually, relationally, emotionally, or mentally (Cram et al., 2003; Jones,

2000). This perspective has been supported by secular research showing that there is a reciprocal relationship between somatic issues and psychological challenges such depression, anxiety, worry and PTSD (Brosschot & Van Der Doef, 2006; Haug et al., 2004; Hensley & Varela, 2008; Larsson, 1991). The Tai Wātea programme assumes that all components of the programme, not just surfing, work together to reduce the chronicity and presence of physical and somatic issues.

Specific Research Focus and Related Hypotheses

Despite the surge of academic and social interest in surf therapy over the last ten years, research on the effectiveness of a surf therapy programme within New Zealand (which would include Polynesian youth) has not yet been conducted. Research on the effects of surf therapy specifically with a justice-involved population is also currently non-existent. Studies on similar populations include Snelling (2015) and Gomes et al.'s (2020) samples of high-risk, marginalised South African and Portuguese adolescents, Morgan's (2010) sample of (mostly indigenous) Australian youth who have experienced or are at risk of experiencing neglect and abuse, Matos et al.'s (2017) sample of Portuguese foster children, Hignette et al.'s (2018) sample on British youth excluded or at risk of exclusion from mainstream education, and Harris's (2015) sample of American adults with a history of trauma and addiction.

In light of these gaps in the literature, as well as the need for effective interventions that can support New Zealand's high-risk youth, the current study aimed to evaluate the effects of the Tai Wātea surf therapy programme. This will be of great value to the growing field of surf therapy, service users and their families, health practitioners, and all of whom share an interest in promoting the

well-being of this vulnerable group of people in Aotearoa. If the data suggest that the programme is effective in producing its desired outcomes (e.g. improving the psychosocial functioning of participants), it will provide grounds to further support the use of surf-therapy interventions within New Zealand, and to conduct additional research into the effectiveness of this approach with high-risk youth within New Zealand and in the rest of the world.

The research hypotheses of the current study are as follows:

1. Tai Wātea graduates will demonstrate significant improvements in their overall level of functioning.
2. Tai Wātea graduates will demonstrate significant improvements in physical functioning.
3. Tai Wātea graduates will demonstrate significant improvements in intrapersonal (emotional) functioning.
4. Tai Wātea graduates will demonstrate significant improvements in interpersonal functioning.
5. Tai Wātea graduates will demonstrate significant improvements in behavioural functioning.
6. Tai Wātea graduates will demonstrate significant improvements in delinquent or anti-social behaviour.
7. Tai Wātea graduates will demonstrate significant improvements in critical issues (e.g. suicidal ideation).
8. Participants in the Tai Wātea programme will demonstrate a gradual improvement in functioning.

Chapter 5

Methodology

Introduction

The previous chapters provided a conceptualisation of Aotearoa's high-risk youth, a review of some of the conventional and alternative interventions available to this population, and an in-depth discussion concerning the unique potential of CB-AT, specifically surf therapy, to reach, engage and support vulnerable populations of people. This information served as background for the aim of the current study, which is to evaluate the effectiveness of a New Zealand based surf therapy programme designed to improve the emotional, social, behavioural and interpersonal functioning of high-risk (mostly indigenous) males in the Bay of Plenty. Provided that this group of young people may be intimidated by or uninterested in conventional interventions, an investigation and evaluation of alternative, novel approaches, more suitable to this population, is highly valuable. In this chapter, the methodological processes of this study will be discussed. The following sections provide an outline of the research design, participants, measurement tools, procedures, data analyses techniques, and ethical considerations.

Research Design

A single-group pre-test, post-test design with repeated measures, and replication (Harris & Jenson, 1985; Kazdin, 2011; Kratochwill & Levin, 2014) was utilised to determine whether participants in the Tai Wātea surf therapy programme experienced statistically and clinically significant improvements in functioning following graduation from the Tai Wātea programme. The research design

consisted of three phases (see Appendix I). Phase one involved collecting up to three baseline measures in the weeks preceding the start of the programme, serving as a way of determining participants' average level of functioning prior the intervention (Smith, 2012). Phase two involved collecting two intervention measures at week 4 (Time 2) and week 7 (Time 3) of the programme, in order to determine the presence, direction and degree of change in the dependent variables over time, with the introduction of the independent variable (Smith, 2012). Phase three involved the collection of a single post-treatment measure (Time 4), the week following participants' graduation from the programme. This process was repeated four times, over the span of one year, with four successive programme intakes. Replication of experimental effects with each new intake will demonstrate that changes in the dependent variables reliably occur once the independent variable is introduced (Harris & Jenson, 1985).

Participants

Intake criteria. Participants were recruited for the Tai Wātea programme in Tauranga, New Zealand, between August 2018 and August 2019. Participants were referred to LFM by whānau, previous participants, or the Department of Corrections due to a range of social, emotional, and behavioural issues. Potential participants were screened by LFM staff and were signed up for the Tai Wātea programme based on the following criteria being met:

i. participant must be male;
ii. participant must self-admit to the programme;
iii. participant must attend a minimum of 6 programme days (including open day);
iv. participant must be between ages 16 to 25 years;
v. participant must be confident in the water;

vi. participant must partake in all parts of the surf programme day.

Participants must also meet at least two of the following criteria for inclusion:

i. participant is disengaged from employment, training or education;

ii. participant has previously been or is currently justice-involved;

iii. participant reports moderate to high levels of drug and/or alcohol use;

iv. participant is experiencing minor to moderate mental health issues.

Participant selection. A non-probability convenience sampling method was used in this study. Following sign up to the programme, participants were invited to partake in the research study. Following a complete description of the study, the procedures involved in participation, and a review of the advantages and disadvantages of participation (Appendix A), written informed consent was obtained (Appendix B). A total of 34 participants completed the baseline phase and entered into the intervention phase. However, seven dropped out of their respective programmes between weeks one and four. Attrition rates were due to relocation on bail conditions, re-arrests, inability to reach the participant, no fixed abode, or entry into employment. Thus, 27 participants completed all three phases of the study.

Demographic information. The mean age of the sample was 19.8 years (*SD* = 2. 4), and ranged between 16 to 24 years. Twenty-two (81%) participants reported indigenous heritage (Māori or mixed Māori- European). Four participants self-identified as New Zealand European and one participant self-identified as Cook Islander. The mean age of participants leaving public schooling was 15 years. Eleven (40%) participants had spent time in prison or youth prison. The legal status of participants at the time of sign-up was as follows: seven had no legal involvement; nine were awaiting a court sentence; eight were on a community work sentence; 15 were on probation/supervision sentence; one was

on home detention; and four participants had been released from prison within the previous month. Seventeen (63%) participants reported membership or affiliation to a New Zealand gang. One participant's caregiver disclosed that he had been diagnosed with a psychiatric disorder five years prior to the programme, and another was diagnosed with a psychiatric disorder during the programme. No other diagnoses were disclosed at the time that participants were signed up, although three participants revealed that they were actively experiencing auditory and/or visual hallucinations in the time following sign up to the programme.

Measurement Tools

Demographic data questionnaire. Demographic data included date of birth, age that they left public school, legal status, time already spent in prison or youth prison, and gang affiliation.

Youth Outcome Questionnaire—Self-Report Version 2.0 (Y-OQ-SR). The Y-OQ-SR (Wells et al., 2003) is a self-report measurement tool for troubled youth (ages 12-18) who are experiencing a wide range of challenges. The Y-OQ-SR was designed specifically for the tracking of treatment progress, and is particularly sensitive to symptom deterioration or improvement (Burlingame, et al., 2001; Burlingame, et al., 2004). It comprises of 64 items that are rated on a 5-point Likert scale with options including: never or almost never (0), rarely (1), sometimes (2), frequently (3), and always or almost always (4). The Y-OQ-SR yields a total distress score (range: -16 — 240) as well as sub-scale scores for the following domains: Intrapersonal Distress (range: -4 — 68); Somatic Complaints (range: 0 32); Interpersonal Relations (range: -6 — 34); Social Problems (range: -2 — 30); Behavioural Dysfunction (range: -4 — 40); and Critical Items (range: 0 — 36). Ridge and colleges (2009) reported an internal consistency reliability of .95 for the Y-OQ-

SR total score. Alpha coefficients for the Y-OQ-SR sub-scales were moderate to high (.71 to .91). The authors also reported a high test-retest correlations for the total score (r = .89) and moderate to high test-retest correlations for sub-scale scores (.68 to .86). Furthermore, the Y-OQ-SR correlates strongly with other commonly used measures of treatment outcomes in youth, such as the Child Behaviour Checklist Youth Self-Report (Achenbach, 1999; r = .83) and the Behaviour Assessment System for Children 2 — Self-Report of Personality (Reynolds & Kamphaus, 2004; r = .75). Lastly, investigating a US-based sample, Harrison (2006) reported that socio-economic status, ethnicity, acculturation, or native status had no significant effects on Y-OQ-SR scores. However, demographic variables that did have a significant effect on Y-OQ-SR scores consisted of age, academic performance, religious group affiliation and gender.

This study employed the Y-OQ (youth measure) instead of the Outcome Questionnaire (OQ; adult measure). Firstly, this was because not all participants were above 18 years of age; and secondly, a large percentage of the OQ assesses functioning in regards to one's social role, which is not applicable to disengaged young people who do not partake in work or study. In light of this, and according to Dr. Burlingame, utilising the Y-OQ-SR was most appropriate in the current study (C. Nui, personal communication, June 06, 2018).

Procedure

Pre-intervention phase. Once participants were signed up for the Tai Wātea programme and had provided written informed consent, baseline data was collected. The demographic information form and the Y-OQ-SR were completed in a private room at the LFM office in an interview style. Although lack of anonymity had the potential to hinder honest responses, this procedure worked well as it enabled

the researcher to clarify any misunderstandings regarding a question, to answer queries, and to minimise missing data. This procedure was replicated up to three times (depending on the life circumstance, willingness and availability of each participant) in the weeks prior to the programme.

Prison procedure. Two participants were re-arrested in week two of their respective programmes intakes. Through correspondence, both participants expressed an eagerness to rejoin the following Tai Wātea programme. The Y-OQ-SR questionnaire was posted to them and both participants completed two baseline measures one week apart, while incarcerated. Their third baseline measure was collected in a private room at the LFM office within the week of their release and just prior to starting a new programme.

Intervention phase. Intervention data was collected on two occasions in an interview style, in a private room at the LFM office. Time 2 data was collected in week four and Time 3 data was collected in week seven.

Post-intervention phase. Post-intervention data was collected on one occasion. Time 4 data collection took place in a private room at the LFM offices in the week following graduation from the programme. Following the completion of the Y-OQ-SR, participants received a $25 Prezi card as a koha (gift, present, contribution, offering). Following this exchange, Y-OQ-SR scores were calculated for Time 4 before the participant departed from the offices, and the researcher privately shared and discussed the participant's progress with them (as measured by the Y-OQ-SR) from baseline to post-intervention.

Ethical Considerations

Given that information concerning sensitive issues (e.g. drug use, somatic issues, psychological and relationship issues, and criminal behaviour) was collected from participants, it was essential that a detailed explanation of

participants' rights, including the right to decline to answer any question and withdraw from the study at any time, were provided. In addition, transparency around the study's aims and procedures, the types of questions participants could expect, and the risks (e.g. feeling shame) and benefits of partaking in the study were discussed in a way that participants could understand and appreciate. The language and tools used to communicate these issues (aside from the official information sheet) was discussed and finalised with LFM staff who, at the time, had more insight regarding prospective participants' likely behaviours, hopes and concerns. Although it took a great deal of time, it was a priority for the researcher to answer participants' questions and discuss the study in a timely and relaxed manner. Participants were advised to take their time in deciding whether or not they wanted to partake in the study, as a way of honouring their sense of self-determination and decision-making processes.

The researcher was also advised that it would be beneficial to have a presence at the LFM office during the time of recruitment. This was so that she was able to meet, greet and converse with potential future participants, before official sign-up took place. This served to promote mutual trust and respect, which subsequently helped to reduce any discomfort participants may have felt in answering the questionnaire, and encouraged a higher level of openness during the interviews.

After deliberation with LFM staff, it was also agreed upon that the researcher would share each participant's progress with them at the end of their respective programme. This process honoured the mana of each participant, cultivated a more transparent relationship, and established a more balanced power dynamic between the researcher and participants. This also allowed for informal commentary on how accurate participants believed the measure had been at

capturing their personal experience. Participants seemed to appreciate this process immensely, as “the numbers” were frequently viewed as a “confirmation” of what they had experienced internally during the course of the programme. The feedback also seemed to validate and spur-on their changing social identity.

Great care was taken to protect the identity of the young men who participated in the study. Participants were informed that an alias would be used for their data collection, as well as where and how their data would be stored, and that none of their answers would be shared with authorities, friends, LFM staff, volunteers, or family members. A high percentage of participants presented with self-harming behaviour and/or suicidal ideation, as well as symptoms of drug-induced psychosis. Therefore, participants were also informed under which circumstances (i.e., high scores on self-harm or suicidal behaviours), confidentiality would be breached and information would be disclosed to their counsellor, Krista Davis to ensure that they received as much support as possible. Their safety was paramount.

Given that the researcher is of Dutch descent and a substantial percentage of the sample self-identified as Māori (which consequently necessitated an exploration of sociopolitical issues), cultural supervision was sought and provided by Dr. Simon Bennett (Māori Clinical Psychologist, Senior Lecturer, School of Psychology, Massey University, Wellington).

This project was reviewed and approved by the Massey University Human Ethics Committee: Southern B, Application 18/29.

Data Analysis

With the exception of behaviour analysis — where the individual is usually the primary unit of analysis — research in the field of psychology has been largely dominated by a nomothetic approach, which favours null-hypothesis

statistical testing (NHST), *p* values, and group means in determining the effectiveness of an intervention (Blampied, 2017). There is now a substantial amount of literature that critiques this approach (e.g., Cohen, 1994; Gigerenzer & Marewski, 2015; Kline, 2013; Lambdin, 2012; Nickerson, 2000; Wasserstein et al., 2019), or at least, how researchers have utilised it (Spence & Stanley, 2018). For example, it has been pointed out that outcomes based solely on group means (i.e., the average effect on the average person) can obscure non-response and even deterioration within a sample of participants (Busch et al., 2011; Kravitz et al., 2004; Zahra & Hedge, 2010). Additionally, scholars have noted that the individual person's response to any given treatment should be the main concern of clinicians, and group-based outcome data may not represent or apply to any specific individual, inside or outside the respective study (Barlow & Nock, 2009). Furthermore, it has been argued that conventional NHST is not well suited to examining outcomes in single-group, small number, inhomogeneous samples, where participants are scarce, attrition rates are high, and control groups are difficult to incorporate (Blampied, 2013; Micceri, 1989; Sullivan & Feinn, 2012; Zahra & Hedge, 2010). In consideration of these critiques and challenges, clinicians and researchers have encouraged and provided guidelines for a more idiographic approach to assessing the success of a given intervention (Barlow & Nock, 2009; Blampied, 2013; Curreri, et al., 2018; Jacobson & Truax, 1991; Lamiell, 1998; Molenaar, 2004; Wise, 2004). In response to this, the current study utilised modified Brinley Plots (mBPs; Black et al., 2019; Blampied, 2017) as an ideographic method of analysing and presenting each participant's change over the course of the programme (Black et al., 2019).

Modified Brinley plots. mBPs provide a visual representation of the direction and extent of change for each individual participant, comparative to that

individual's baseline functioning (Youngstrom & Langfus, 2018). A single baseline point was obtained for each participant by averaging their pre-intervention scores. This value was then used as their x-axis anchor point on the plot. The y-axis then represents that participant's score at different time points during the study. Consequently, if there was no change in a participant's score from baseline to the relevant time point, the individual's data point would lie on the 45° diagonal line. For a finer analysis of change over time across participants, separate mBPs were created for each time point (i.e. Time 2, Time 3, Time 4), and for each sub-scale of the Y-OQ-SR (e.g. Somatic Complaints), as well as for the Y-OQ-SR total score (see Blampeid, 2017; Gordon, et al., 2015; Lothian, et al., 2016). Given that the individual's change is plotted in the context of all other participants, it allows for an examination of central tendency, outliers, and the consistency with which the intervention outcomes are replicated (Blampied, 2017; Curreri et al., 2018).

Clinically and statistically significant change. Jacobsen and Traux (1991) recommended a two-tiered procedure to determining whether change in participants' scores are meaningful. First, the researcher must determine whether the difference in scores between two time points is reliable (statistically significant). When the degree of change is considered reliable, the researcher must also discern whether this change is clinically significant. Note that change cannot be clinically significant, unless it is first reliable (Jacobson & Truax, 1991; Wise, 2004). This procedure was carried out by utilising the Y-OQ-SR's reliable change index (RCI), and clinical cut-off scores. This information was then communicated on each mBP.

Reliable Change Index. The Y-OQ-SR's RCI represents the size of the difference needed between baseline scores and the relevant time point (e.g. Time 4), for change to be attributed to the intervention under examination ($p < .05$;

Jacobson & Truax, 1991) and not the error of the measurement tool or other research effects (Wells et al., 2003). The RCIs for the Y-OQ-SR are as follows: Total Score: 18; Intrapersonal Distress: 9; Somatic: 6; Interpersonal Relations: 6; Social Problems: 5; Behaviour Dysfunction: 12; Critical Items: 6. On the mBPs, dotted lines parallel to the 45° line indicate the upper and lower limits of the RCI (Figure 3). When a participant's data point was located inside this limit, change was not regarded as reliable (RC0). When an individual's datapoint was located outside and below this limit, it was classified as a statistically significant improvement (RC+). Alternatively, if the datapoint fell outside and above this limit, it was considered statistically significant deterioration (RC-).

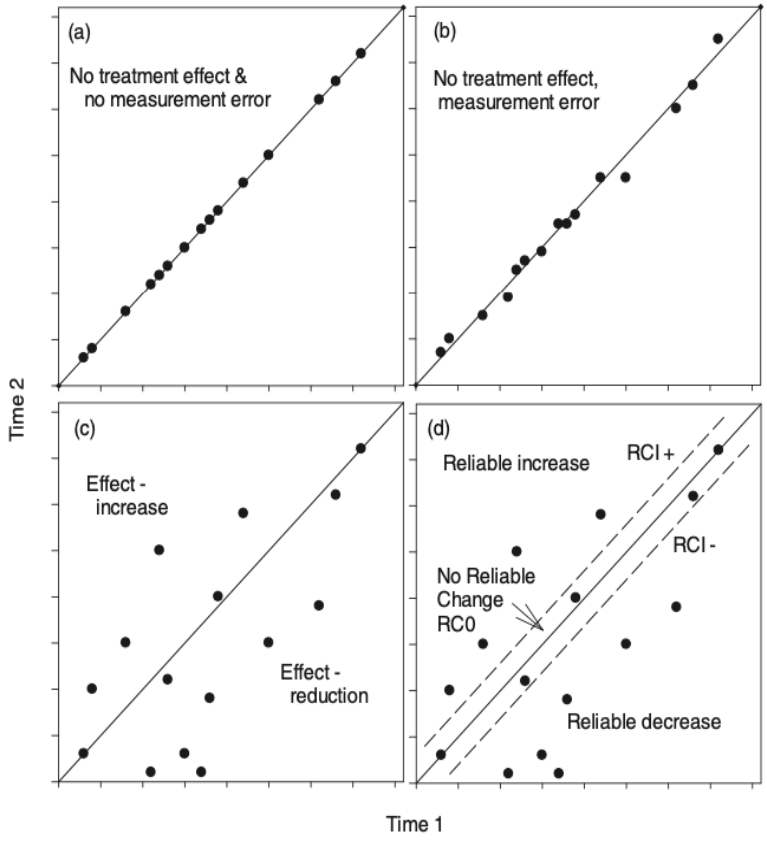


Figure 3. Graphs (a)–(d) illustrate how the upper and lower boundaries of the reliable change index can be added to a modified Brinley plot, so that statistically significant improvement or deterioration may be observed in each participant (as seen in Blampied, 2017).

Cut-off Scores: The Y-OQ-SR's established clinical cut-off scores distinguish clinical levels of functioning (i.e. impatient and outpatient populations samples) from normal levels of functioning (i.e. community population sample). The clinical cut-off scores for the Y-OQ-SR are as follows: Total score: >47; Intrapersonal Distress: >17; Somatic: >6; Interpersonal Relations: >3; Social Problems: >3; Behaviour Dysfunction: >11; Critical Items: >6. On the mBPs, vertical (x-axis; baseline) and horizontal (y-axis; relevant time point) lines indicate the measurement tool's clinical cut-off values. An arrowhead on the vertical cut-off line shows that decreases in scores represent therapeutic improvement. Clinically significant change was apparent when a participant's data point fell outside the RCI boundary ***and*** below the horizontal line. Note that when a participant did not score within the clinical range prior to the intervention, it could only be said that the person had achieved reliable change. Clinically significant change cannot be achieved, since the individual is unable to actually cross the clinical threshold.

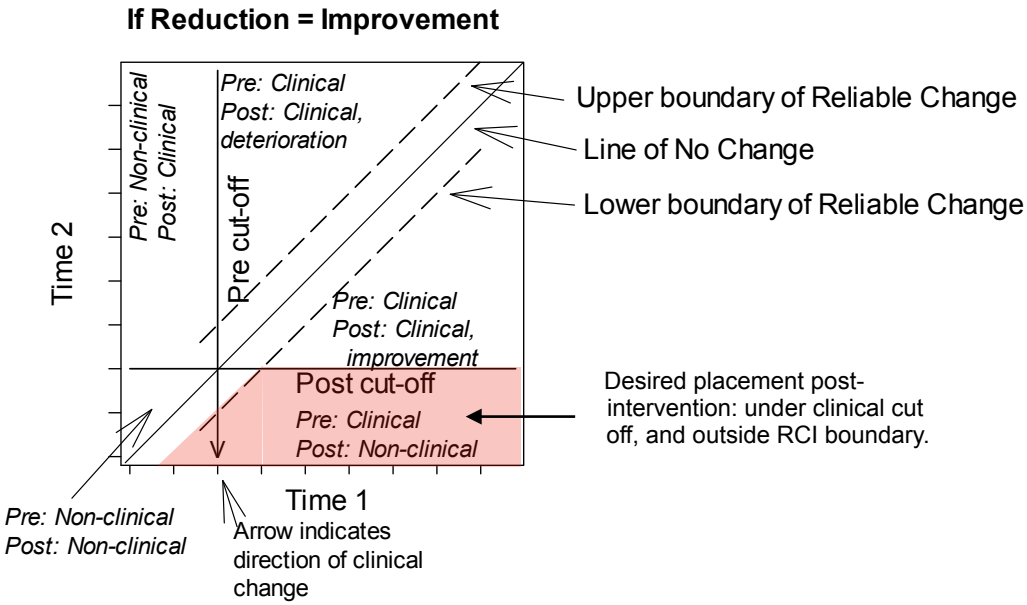


Figure 4. Figure illustrates how modified Brinley plots can be partitioned into zones using clinical cut-off points so that clinically significant improvement may be observed in each participant (as seen in Blampied, 2017).

Nomothetic additions. Nomothetic, or group-based outcomes, were also analysed and reported directly on the graph (Lane & Sandor, 2009). As recommended by Blampied (2017) and Black et al. (2018), various effect size measures were calculated for the current study. Cohen (1990) has previously argued that effect sizes should always be "the primary product of a research inquiry" (p. 1310) — as opposed to *p* values — as these communicate the (estimated) magnitude of therapy effects on participants within a study (Lakens, 2013). This principle has also been supported by Geoff Cumming (2012; 2014) and others (Rosnow & Rosenthal, 2009; Sullivan & Feinn, 2012). By displaying effect sizes on the mBPs, both individual and aggregate levels of analysis can be observed, which assures a higher levels transparency and enhances the integrity of the research report (Rosnow & Rosenthal, 2009; Sullivan & Feinn, 2012).

The effect size measures employed in the study included the RC+% (Blampied, 2017), the common language effect size (CLES; Lakens, 2013; McGraw & Wong, 1992) and Cohen's d_{av} (Cohen, 1988). Firstly, the RC+% expresses the percentage of participants who demonstrate reliable change at any given time point (e.g. Time 3). All of these effect size measures compliment each other in the process of understanding the outcome data (Blampied, 2017; Lakens, 2013). Naturally, the RCI+% will determine whether the study's hypotheses are supported by the data or not, as the hypotheses centre on the number, or percentage, of participants demonstrating reliable, or statistically significant, change.

The CLES quantifies the extent of any overall shift away from the 45° diagonal line of no change, in the therapeutic direction, and calculates the likelihood that any participant will have an improved score at a given time point. Simply put, it communicates the percentage of participants demonstrating even

small improvement. Note that the CLES does not measure reliable improvement, it merely requires movement in the therapeutic direction (Blampied, 2017). The Lakens (2013) spreadsheet was utilised in order to calculate the CLES for this study.

Lastly, for a 'within-group' research design, Cohen's d_{av} (Lakens, 2013) was calculated in order to show the mean difference between participants' baseline scores and their scores at a given time point. Cohen's d_{av} utilises the average SD of the repeated measures as a 'standardiser', ignoring the correlation between measures (Lakens, 2013). Cohen (1988) has suggested that *d* equal to 0.20 be considered a 'small' effect size, 0.50 a 'moderate' effect size and 0.80 a 'large' effect size. A power of 0.80 is his recommended minimum (Cohen, 1988). However, Cohen also posited that these values are somewhat capricious and must not be interpreted rigidly. Lakens (2013) recommends that Cohen's ***d*** be interpreted in light of the other indices of effect in the study (i.e. CLES, RCI+%), other studies utilising the same outcome measure (i.e. the Y-OQ-SR) or investigating a similar intervention (i.e. CB-AT and/or surf therapy), and the practical implications that the effect size indicates.

As encouraged by Cumming (2012), a 95% confidence interval (CI) on *d* was also reported. Note that the smaller the CI, the more precise the effect size estimate is, and if the 95% CI does not cross zero, it suggested a reliable treatment effect in the same way that a t-test does for a 'between-group' analysis. Cumming's (2012) software programme was utilised in order to calculate Cohen's d_{av}, and the associated CI's for this study.

Chapter 6

Results

Introduction

Data analyses were conducted to evaluate the effects of the Tai Wātea surf therapy programme on the physical, intrapersonal, interpersonal, social and behavioural functioning of 27 high-risk males aged 16-24 years. Participants completed the Y-OQ-SR questionnaire up to three times prior to the programme (Baseline; Time 1), in week four of the programme (Time 2), in week seven of the programme (Time 3), and in the week following graduation from the programme (Time 4). One participant was unable to complete the questionnaire at Time 3 and thus this time point only contained data for 26 participants. This chapter summarises the main findings of the current study. The chapter will commence with a correlation matrix of the Y-OQ-SR sub-scales in order to establish the psychometric validity of the measure. This will then be followed by a brief summary of how the modified Brinley plots (mBPs) are presented in this study and how to interpret them. The rest of the chapter will centre on the findings of the study, according to each of the eight research hypotheses.

Inter-correlation analysis of the Y-OQ-SR

An inter-correlation analysis, using Pearson's correlation coefficient, was calculated based on participants' mean baseline scores on the Y-OQ-SR questionnaire. Inspection of the correlation matrix (Table 2) revealed strong correlations (.54–.62; p = .01) between the Intrapersonal Distress, Somatic Complaints and Critical Items sub-scales. Additionally, there was also a strong

Table 2

Inter-correlations of the Youth Outcome Questionnaire Self Report sub-scales and Total Score

	ID	SC	IR	SP	BD	CI	TOTAL
ID							
SC	.62**						
IR	.21	.24					
SP	-.01	.04	.53**				
BD	.28	.23	.51**	.50**			
CI	.62**	.54**	.44*	.31	.46*		
Total	.79**	.68**	.63**	.45*	.67**	.82**	

Note. Intrapersonal Distress (ID); Somatic Complaints (SC), Interpersonal Relations (IR), Social Problems (SP), Behavioural Dysfunction (BD), Critical Items (CI) and Total score (Total).
**. p < .01, two-tailed. *. p < .05, two-tailed.

correlation (.50–.53; p = .01) between the Social Problems, Interpersonal Relations and Behavioural Dysfunction sub-scales. Furthermore, the matrix revealed a moderate correlation (.46–.46; p = .05) between the Critical Items, Interpersonal Relations and Behavioural Dysfunction sub-scales.

Presentation of Modified Brinley Plots

In order to investigate change over time, separate mBPs were created for each time point, for the Y-OQ-SR Total Score and for each sub-scale (see Rucklidge & Blampied, 2011). Outcomes on each sub-scale are presented in three consecutive plots and should be studied from top to bottom. The top mBP in each column compares participants' mean baseline score against their scores at week four (Time 2), the middle mBP compares participants' mean baselines scores against their scores at week seven (Time 3), and the bottom mBP in each column compares participants' mean baseline scores with their post-intervention

scores (Time 4). A description on how to interpret the various features of a mBp may be found in the previous chapter.

Hypothesis 1: Improved Overall Functioning

The Y-OQ-SR total score is a summation of all sub-scales and reflects a person's overall psychosocial functioning. Figure 5 conveys that all participants scored within the clinical range at baseline (*M* = 76.39; *SD* = 23.06). Following graduation, 25 out of 27 (92%) participants demonstrated reliable change and 20 participants demonstrated clinically significant change on the Y-OQ-SR Total

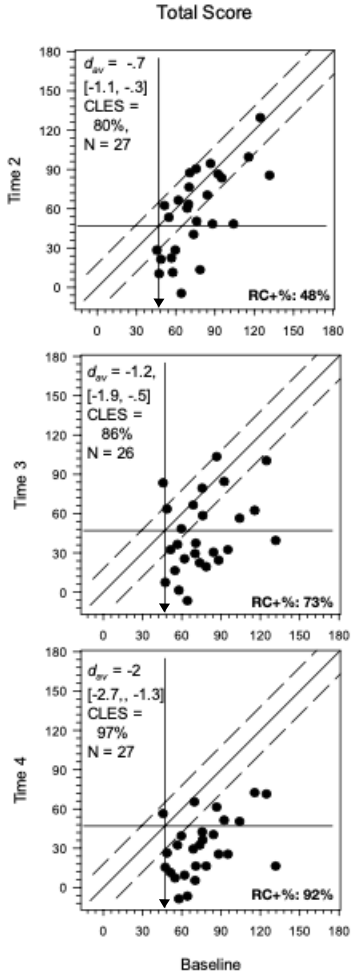


Figure 5. Modified Brinley plots illustrating changes in Youth Outcome Questionnaire (Self-Report) Total Score from baseline to three time points: week 4 (Time 2), week 7 (Time 3) and post-intervention (Time 4). Graphs also include effect sizes, namely, Cohen's d_{av}, the common language effect size (CLES) and

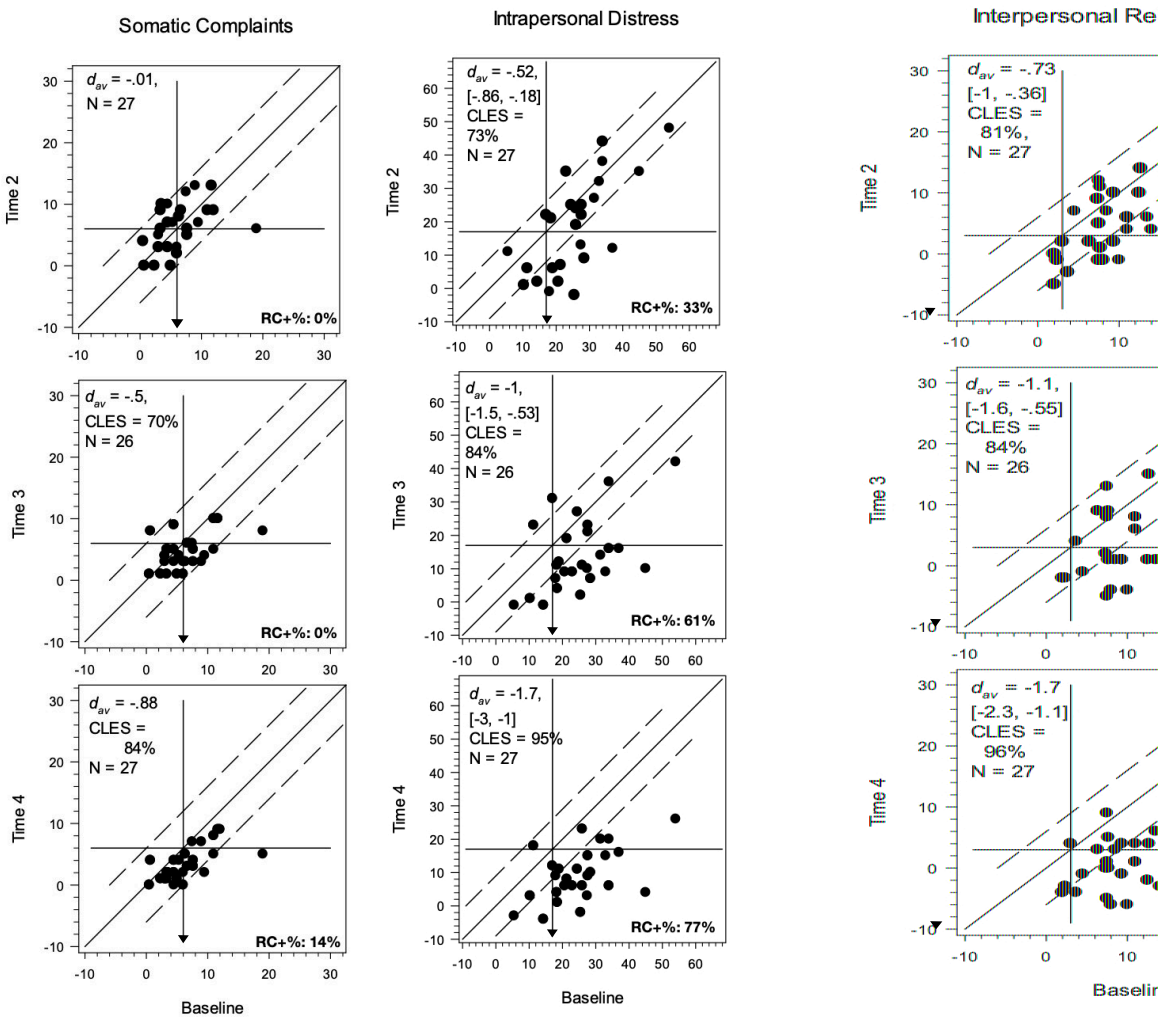
Score. The CLES indicated that almost all participants (96%) experienced an improvement in their overall functioning at Time 4. In addition, Cohen's *d* (d_{av} = -2.0) and the related CI (-1.3, -2.7) on *d* conveyed that the Tai Wātea programme had a statistically significant, large effect on the overall functioning of participants (*M* = 30.77; *SD* = 22.55). No deterioration effects were observed at post-intervention. The first hypothesis was strongly supported by this data.

Hypothesis 2: Improved Physical Functioning

Physical functioning was assessed with the Somatic Complaints sub-scale of the Y-OQ-SR. High scores suggest frequent physical and/or somatic complaints (e.g., headache, stomach problems, insomnia). Figure 6 shows that 14 out of 27 participants scored above the clinical cut-off point at baseline (*M* = 6.46; *SD* = 4.6). Only four participants showed reliable change (14%) at Time 4; with three of these demonstrating clinically significant change. However, the CLES indicated that a large percentage (84%) of participants experienced some improvement regarding this area of functioning. The Cohen's *d* statistic showed that participants' scores reduced by 0.88 of a *SD* following graduation (*M* = 3.40; *SD* = 2.73). This may conventionally be classed as a 'large' effect size (Cohen, 1988). However, based on the other indices of effect, and the fact that the majority (23 out of 27) of participants did not demonstrate statistically or clinically significant improvement, *d* was considered negligible. Hence, the CI for this sub-scale was not calculated. Clinical deterioration was not evident at post-intervention. Data pertaining to this sub-scale did not support the second hypothesis.

Hypothesis 3: Improved Intrapersonal Functioning

Intrapersonal functioning was assessed with the Intrapersonal Distress sub-scale of the Y-OQ-SR. High scores suggest increased emotional distress (e.g., anxiety, depression). Figure 7 shows that 24 out of 27 participants scored within the clinical range at baseline (*M* = 25.15; *SD* = 10.48). Following graduation, 20 out of 27 (77%) participants demonstrated reliable change and 18 participants demonstrated clinically significant change. The CLES also revealed that almost all participants (95%) experienced improved intrapersonal functioning following the



Figures 6, 7 & 8: Modified Brinley plots illustrate changes in Somatic Complaints, Intrapersonal Distress and Interpersonal Relations sub-scales from baseline to three time points: week 4 (Time 2), week 7 (Time 3) and post-intervention (Time 4). Graphs also include effect sizes, namely, Cohen's d_{av}, the common language effect size (CLES) and the reliable change percentage (RC+%).

intervention. Cohen's d_{av} suggested that participants' mean scores reduced by 1.7 SDs at Time 4 (M = 9.73; SD = 6), a large effect for this sub-scale. As the upper and lower limits of the CI did not cross zero, a statistically significant treatment effect was demonstrated. Clinical deterioration was evident at Time 2 and Time 3 for two participants. The data strongly supported the third hypothesis.

Hypothesis 4: Improved Interpersonal Functioning

Interpersonal functioning was assessed using the Interpersonal Relations sub-scale of the Y-OQ-SR. High scores suggest substantial interpersonal difficulty with family, other adults, and peers (e.g., verbal aggression, defiance, arguing). Figure 8 depicts that 25 out of 27 participants scored above the clinical threshold at baseline (M = 8.94; SD = 4.6). Following graduation, 19 out of 27 (70%) participants demonstrated reliable change and 13 participants demonstrated clinically significant change by crossing the clinical cut-off line. As with the previous sub-scale, the CLES (96%) and Cohen's d (d_{av} = -1.7; M = 1.11; SD = 4.69) both indicated a large effect size. The upper and lower boundaries of the CI on d were -2.3 and -1.1, respectively, suggesting a reliable treatment effect. No deterioration effects were observed at any time point. The fourth hypothesis was also strongly supported by the data.

Hypothesis 5: Improved Behavioural Functioning

Behavioural functioning was assessed using the Behavioural Dysfunction sub-scale of the Y-OQ-SR. High scores suggest difficulty with ADHD-type symptoms (e.g. attention and concentration, managing impulsive behaviors, organisation, task completion and frustration tolerance). Figure 9 illustrates that 25 out of 27 participants scored within the clinical range at baseline (M = 16.67; SD = 5.17). Following graduation, only 9 out of 27 (33%) participants

demonstrated reliable change, 8 demonstrating clinically meaningful change. However, a large percentage of participants did show improvement in behavioural functioning at Time 4 (CLES = 89%). Cohen's *d* was interpreted as a moderate to large effect size, with a mean reduction of 1.4 SDs from baseline to post-intervention (*M* = 8.51; *SD* = 6.32). This effect size was interpreted with caution, as a considerable percentage (67%) of participants did not experience statistically significant change. The upper and lower limit of the CI on *d* was -2 and -.8, demonstrating a reliable treatment effect. No deterioration effect were

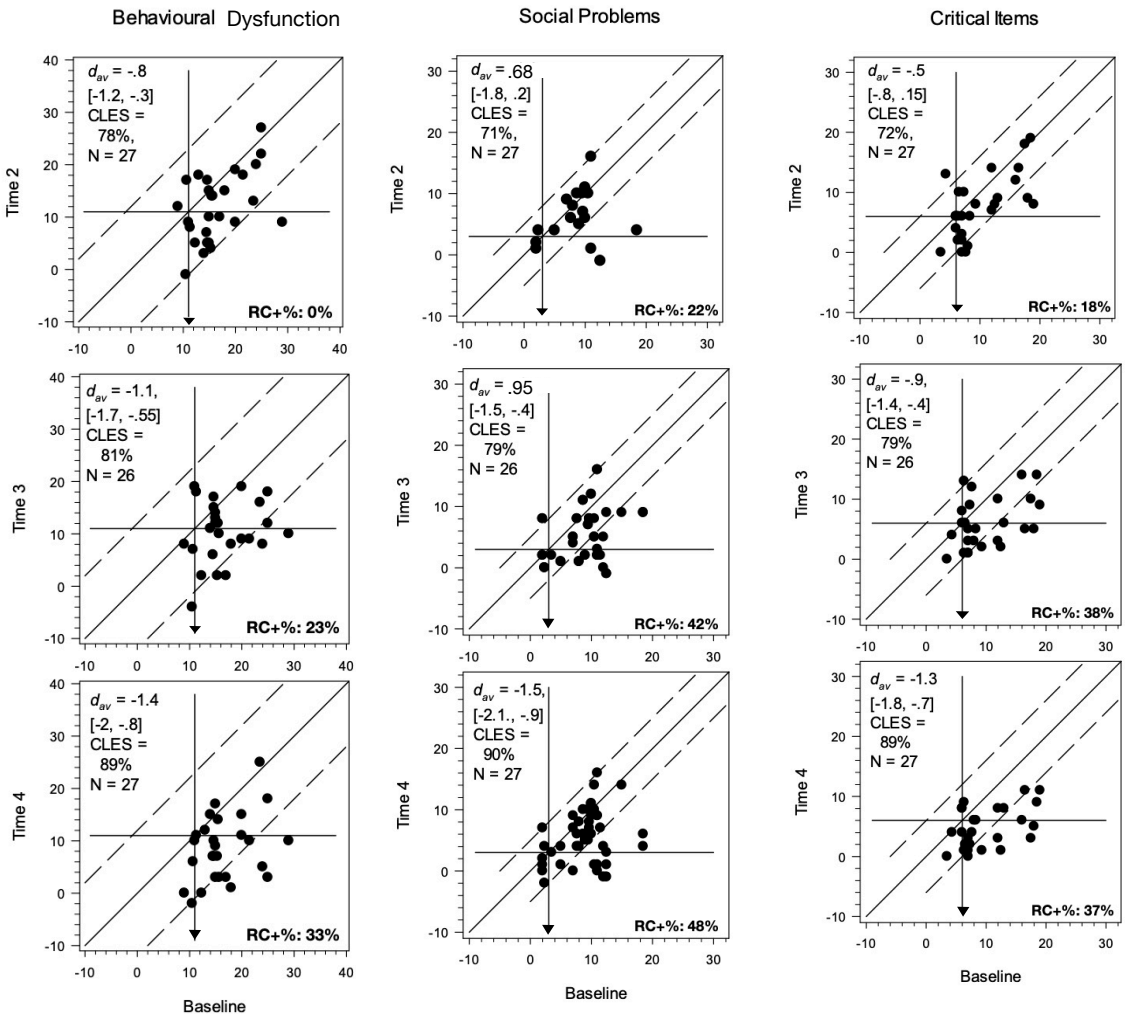


Figure 9, 10 & 11. Modified Brinley plots illustrate changes in Behavioural Dysfunction, Social Problems and Critical Items sub-scales from baseline to three time points: week 4 (Time 2), week 7 (Time 3) and post intervention (Time 4). Graphs also include effect sizes, namely, Cohen's d_{av}, the common language effect size (CLES) and the reliable change percentage (RC+%).

observed at any time. The data pertaining to this sub-scale somewhat supported the fifth hypothesis.

Hypothesis 6: Reduction in Anti-social Behaviour

Anti-social behaviour was assessed using the Social Problems sub-scale of the Y-OQ-SR. High scores suggest frequent engagement in behaviors that violate social expectations (e.g., destroying property, drug/alcohol use, verbal threats and physical aggression). Figure 10 shows that 25 out of 27 participants scored within the clinical range at baseline (M = 9.23; SD = 3.88). Following graduation, 13 out of 27 (48%) participants demonstrated reliable change; 7 demonstrating clinically significant change. One participant was situated on the clinical cut-off line at Time 4. The CLES (90%) and Cohen's d (d_{av} = -1.5; CI = -.9, -2.1) indicated a large treatment effect (M = 3.7; SD = 3.41) for this sub-scale. Clinical deterioration was seen in two participants at Time 3 and in one participant at Time 4. Outcome data supported the the sixth hypothesis.

Provided that the Tai Wātea programme serves young males who present with substance misuse or dependence, the frequency with which participants used drugs or alcohol was also analysed. Table 3 displays changes in participant

Table 3

Change in frequency of self-reported drug and alcohol use

	Baseline 1	Time 2	Time 3	Time 4
Never/Almost Never	1	2	3	5
Rarely	1	8	9	8
Sometimes	9	8	5	11
Frequently	11	6	8	3
Always/Almost Always	5	3	1	0

responses to the item *"I use alcohol or drugs",* over the course of the programme. The data suggested that the programme did have an impact on the frequency with which participants used alcohol or other drugs. For example, the frequency with which participants answer "Never or Almost Never" to this question gradually increased, and the frequency with which participants answer "Always or Almost Always" gradually decreased to zero at post-intervention.

Hypothesis 7: Reduction in Critical Issues

Changes in critical issues that need clinical attention was drawn from the Critical Items sub-scale of the Y-OQ-SR. High scores on this sub-scale suggested that participants' required immediate clinical attention (e.g., suicidal ideation and attempts, visual and auditory hallucinations). Figure 11 conveys that 25 out of 27 participants scored within the clinical range on this sub-scale at baseline (M = 9.95; SD = 4.77). Following graduation, 10 out of 27 (37%) participants demonstrated reliable change, and 7 of these individuals demonstrated clinically meaningful change. One participant was situated on the clinical cut-off line at Time 4. Cohen's d_{av} estimated a reduction of 1.3 SDs (CI = -.7, -1.8) in scores from baseline to post-intervention (M = 4.66; SD = 3.37) and the CLES

Table 4

Change in frequency of self-reported suicidal ideation

	Baseline 1	Time 2	Time 3	Time 4
Never/Almost Never	13	14	21	24
Rarely	7	9	3	2
Sometimes	3	2	2	1
Frequently	3	1	0	0
Always/Almost Always	1	1	0	0

Table 5

Change in frequency of self-reported self-harming behaviour and suicide attempts

	Baseline 1	Time 2	Time 3	Time 4
Never/Almost Never	21	23	24	27
Rarely	4	2	1	0
Sometimes	1	1	1	0
Frequently	0	0	0	0
Always/Almost Always	1	1	0	0

communicated that 89% of participants experienced an improvement in clinical issues at post-intervention. Based on these indices of effect, and the particular nature of this particular sub-scale, it was determined that the programme had a large effect on this area of functioning. Clinical deterioration was observed in one participant at Time 2 and Time 3. The outcome data lent some support to hypothesis seven.

Given that Māori have a suicide rate almost one and a half times greater than non-Māori (Beautrais & Fergusson, 2006), especially between the ages of 15-25, the frequency with which participants experienced suicidal thoughts, self-harming behaviour, or attempted suicide was specifically analysed. Table 4 displays change in participant responses to the item *"I think about suicide or feel I would be better off dead"* and Table 5 displays change in participant responses to the item *"I have hurt myself on purpose (for example, cut, scratched or attempted suicide)".* Data indicated that the programme did have had an impact on suicidal ideation and self-harm. For example, the frequency with which participants answered "Never or Almost Never" to these items gradually increased, and the frequency with which participants answer "Rarely", "Sometimes", "Frequently" and "Always or Almost Always" gradually decreased to zero at post-intervention.

Hypothesis 8: Gradual Change Over Time

Gradual change over the course of the intervention was observed in the steady reduction of group means at each time point on each sub-scale (Figure 12). The same trend was observed in the gradual downward movement of the dots that represent each of the participants on Figures 5 to 11. This gradual descent was not only observed visually, but was statistically expressed and confirmed by the RCI+%. Gradual change was also observed in the other two indices of effect (i.e. Cohen's d_{av} and the CLES). A summary of all nomothetic data can be viewed in Table 6. Gradual change over the course of the intervention as expressed by the CLES and Cohen's *d* may also be viewed graphically in Figures 13-19, and Figures 20-26, respectively.

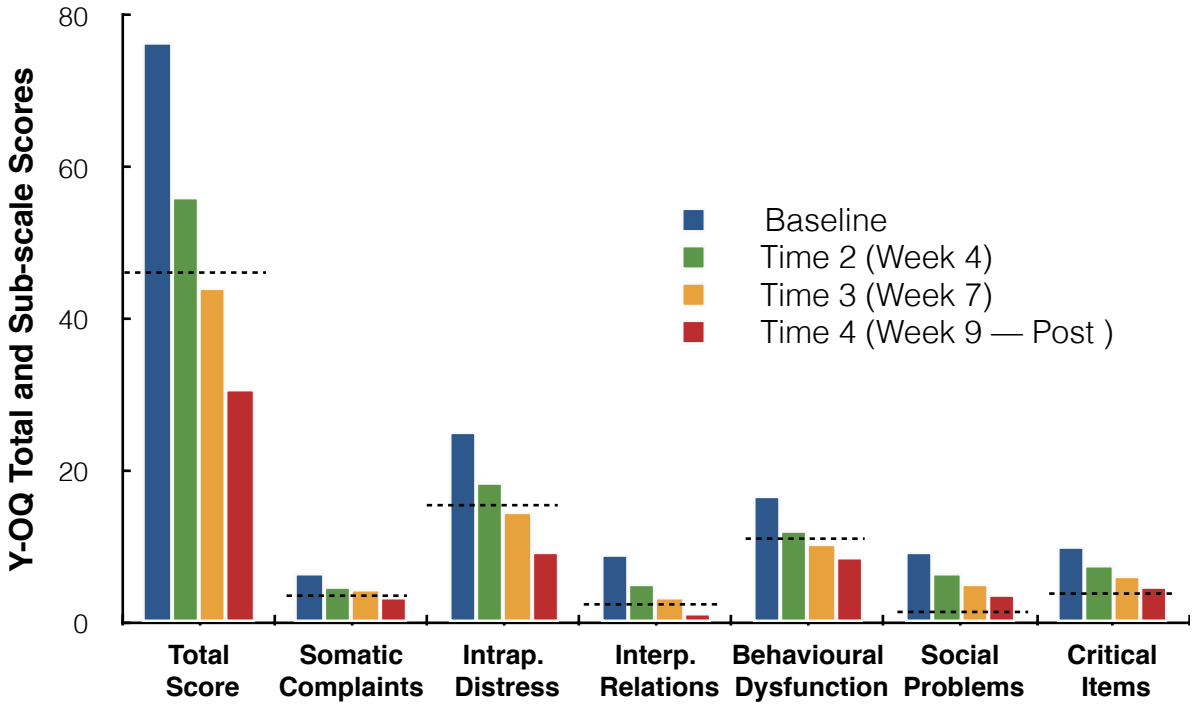


Figure 12. Changes in group means on Youth Outcome Questionnaire Self-Report Total Score and on sub-scales over time. Cut-off lines mark the clinical significance of mean score reduction.

Table 6

A summary of nomothetic data

Sub Scale	Range	Mean	SD	Cohen's *d*av	CI	CLES	RCI+%
Somatic Complaints							
Baseline	0.5, 19	6.46	4.06				
Time 2 (Week 4)	0, 13	4.66*	3.37	-0.005	-0.393; 0.402	68%	0%
Time 3 (Week 7)	1, 10	4.5*	2.73	-0.512	-0.941; -0.074	70%	0%
Time 4 (Week 9)	0, 9	3.40*	2.73	-0.883	-1.288; -0.467	84%	14%
Intrapersonal Distress							
Baseline	5.5, 54	25.15	10.48				
Time 2 (Week 4)	-2, 48	18.66	14.09	-0.522	-0.862; -0.175	73%	31%
Time 3 (Week 7)	-1, 42	14.5*	11	-1.008	-1.477; -0.526	84%	61%
Time 4 (Week 9)	-4, 26	9.37*	6	-1.705	-2.297; -1.099	95%	77%
Interpersonal Relations							
Baseline	2, 19.5	8.94	4.6				
Time 2 (Week 4)	-5, 14	5.18	5.98	-0.728	-1, 090; -0.356	81%	37%
Time 3 (Week 7)	-5, 17	3.5*	5.98	-1.066	-1.570; -0.548	84%	46%
Time 4 (Week 9)	-6, 9	1.11*	4.69	-1.683	-2.259; -1.094	96%	70%
Behavioural Dysfunction							
Baseline	9, 29	16.67	5.17				
Time 2 (Week 4)	-1, 27	12.00*	6.57	-0.790	-1.225; -0.343	78%	0%
Time 3 (Week 7)	-4, 19	10.5*	5.8	-1.137	-1.706; -0.553	81%	23%
Time 4 (Week 9)	-2, 25	8.51*	6.32	-1.411	-1.981; -0.825	89%	33%

Table 6

A summary of nomothetic continued

Sub Scale	Range	Mean	SD	Cohen's *d*av	CI	CLES	RCI+%
Social Problems							
Baseline	2, 18.5	9.23	3.88				
Time 2 (Week 4)	-1, 16	6.4	4.47	-0.683	-1.76; -0.163	71%	22%
Time 3 (Week 7)	-1, 15	5.3	4.28	-0.945	-1.465; -0.410	79%	42%
Time 4 (Week 9)	-2, 11	3.7	3.41	-1.512	-2.107; -0.901	90%	48%
Critical Items							
Baseline	3.5, 19	9.95	4.77				
Time 2 (Week 4)	0, 19	7.44	5.22	-0.50	-0.84; -0.15	0.72	22%
Time 3 (Week 7)	0, 14	6.03	4.21	-0.90	-1.37; -0.41	0.79	42%
Time 4 (Week 9)	0, 11	4.66*	3.37	-1.30	-1.78; -0.75	0.89	48%
Total Score							
Baseline	46, 132	76.39	23.06				
Time 2 (Week 4)	-5, 129	56.18	32.87	-0.712	-1.084; -0.329	80%	48%
Time 3 (Week 7)	-7, 103	44.00*	29.53	-1.210	-1.859; -0.543	86%	73%
Time 4 (Week 9)	-9, 72	30.77*	22.55	-2.000	-2.664; -1.321	97%	92%

* scores below the clinical range

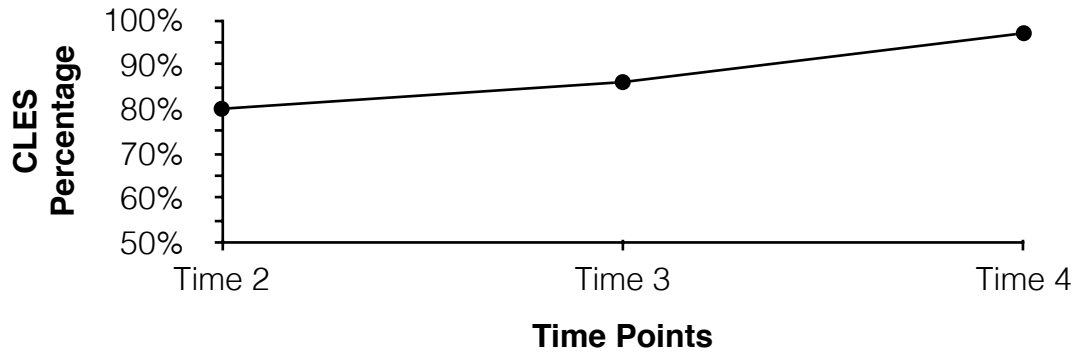


Figure 13. Change in the Common Language Effect Size (CLES) on the Youth Outcome Questionnaire Self Report Total Score at week 4 (Time 2), week 7 (Time 3) and post-intervention (Time 4).

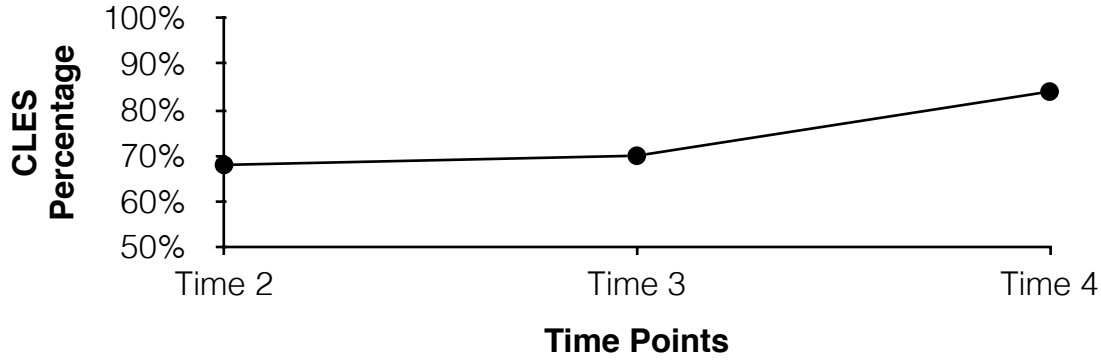


Figure 14. Change in the Common Language Effect Size (CLES) on the Somatic Complaints sub-scale at week 4 (Time 2), week 7 (Time 3) and post-intervention (Time 4).

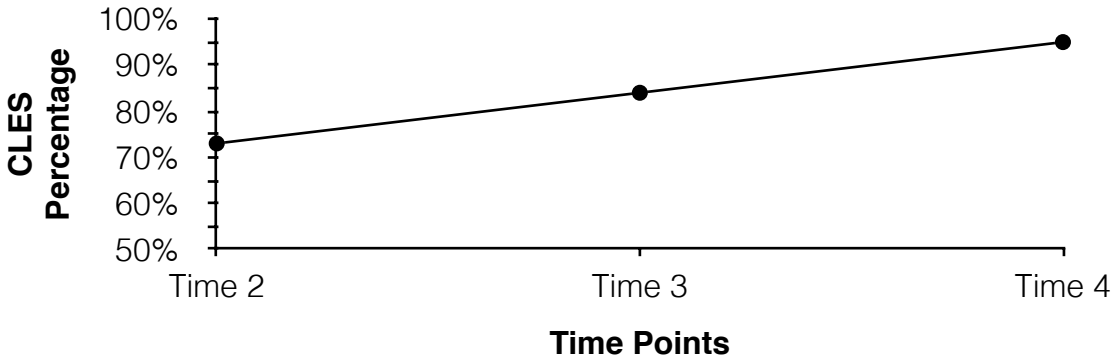


Figure 15. Change in the Common Language Effect Size (CLES) on the Intrapersonal Distress sub-scale at week 4 (Time 2), week 7 (Time 3) and post-intervention (Time 4).

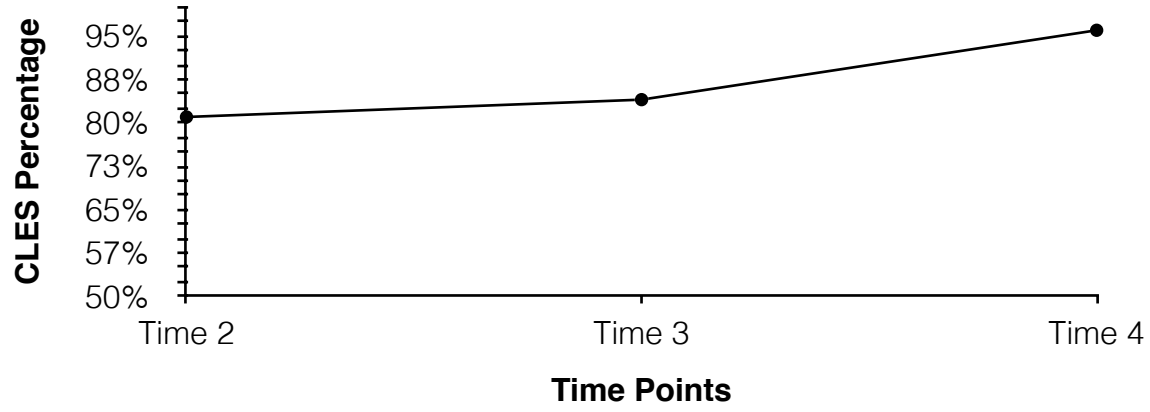


Figure 16. Change in the Common Language Effect Size (CLES) on the Interpersonal Relations sub-scale at week 4 (Time 2), week 7 (Time 3) and post-intervention (Time 4).

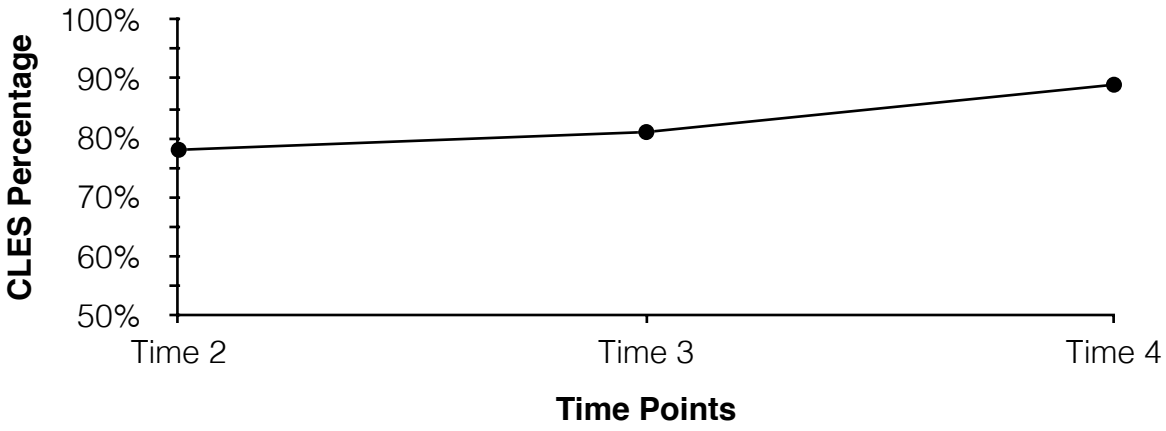


Figure 17. Change in the Common Language Effect Size (CLES) on the Behavioural Dysfunction sub-scale at week 4 (Time 2), week 7 (Time 3) and post-intervention (Time 4).

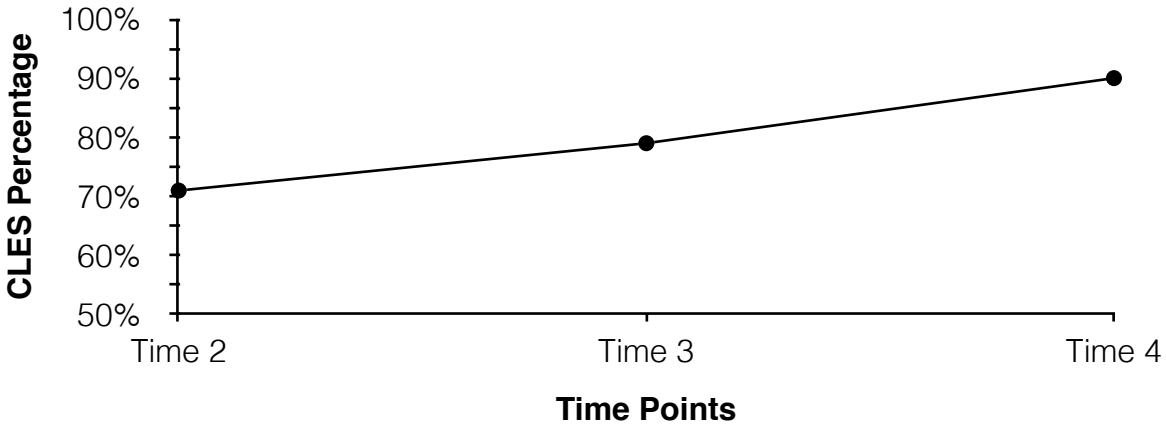


Figure 18. Change in the Common Language Effect Size (CLES) on the Social Problems sub-scale at week 4 (Time 2), week 7 (Time 3) and post-intervention (Time 4).

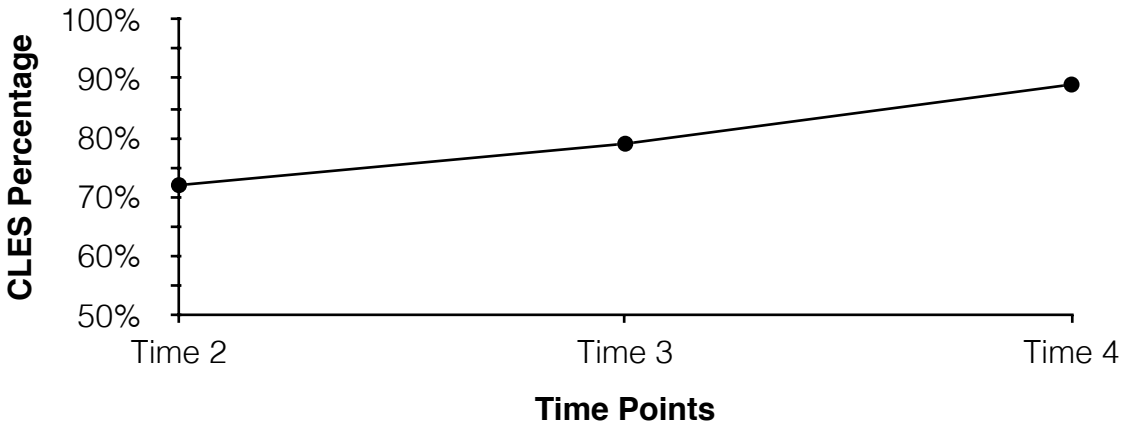


Figure 19. Change in the Common Language Effect Size (CLES) on the Critical Items sub-scale at week 4 (Time 2), week 7 (Time 3) and post-intervention (Time 4).

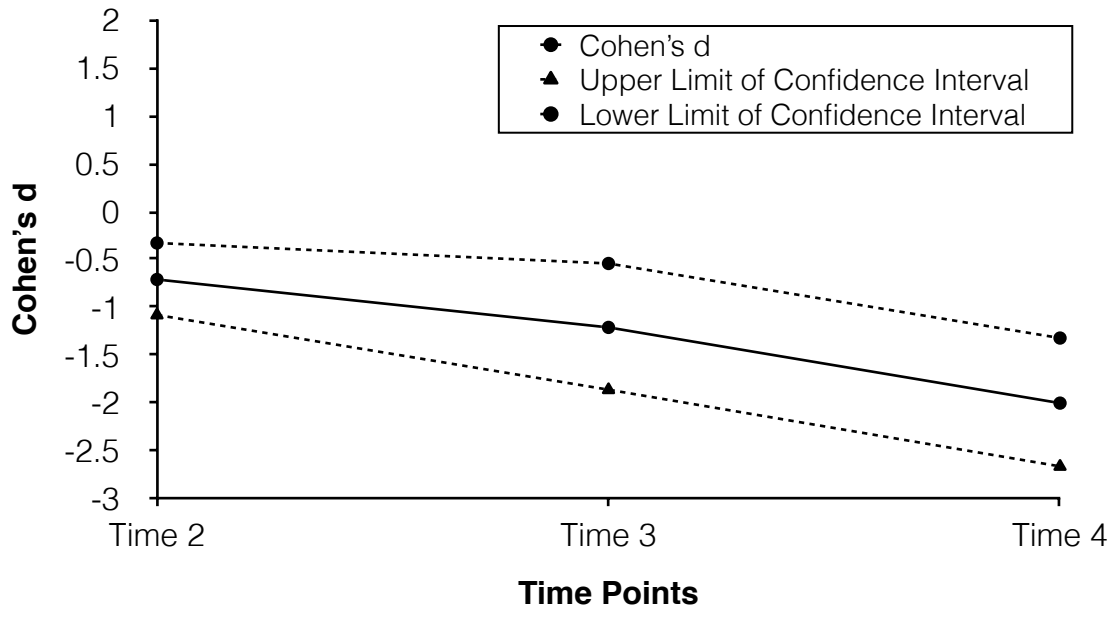


Figure 20. Change in the Cohen's d_{av} on the Youth Outcome Questionnaire Self Report Total Score at week 4 (Time 2), week 7 (Time 3) and post-intervention (Time 4).

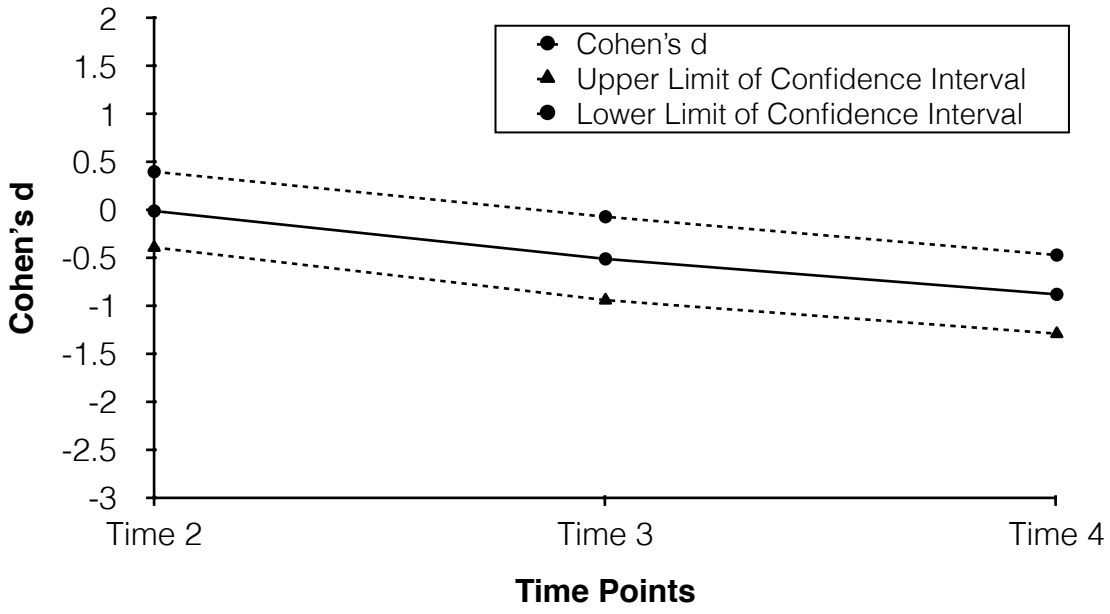


Figure 21. Change in the Cohen's d_{av} on the Somatic Complaints sub-scale at week 4 (Time 2), week 7 (Time 3) and post-intervention (Time 4).

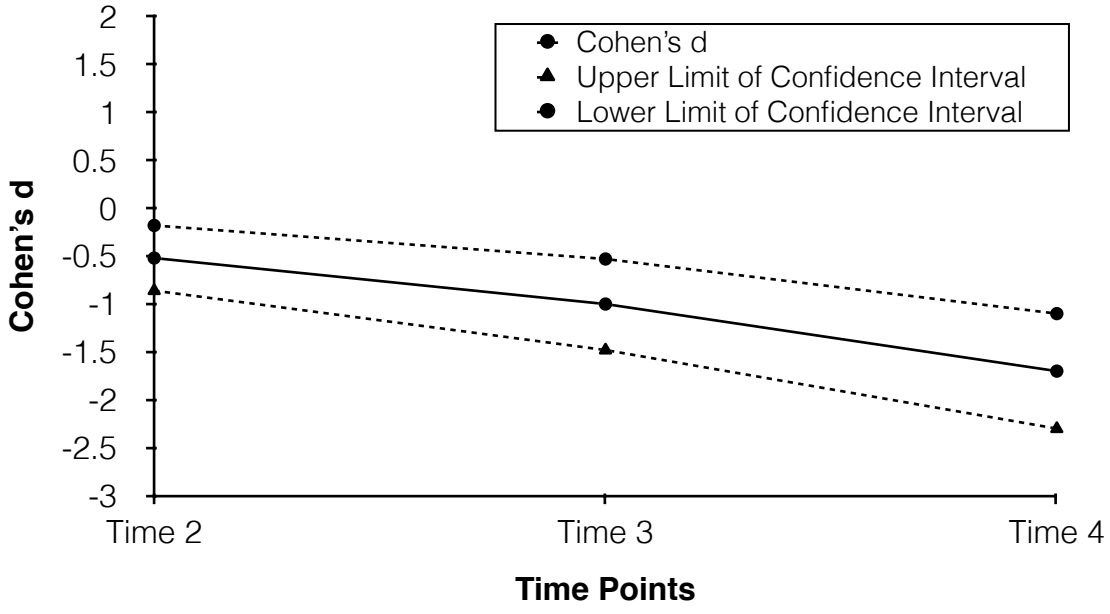


Figure 22. Change in the Cohen's d_{av} on the Intrapersonal Distress sub-scale at week 4 (Time 2), week 7 (Time 3) and post-intervention (Time 4).

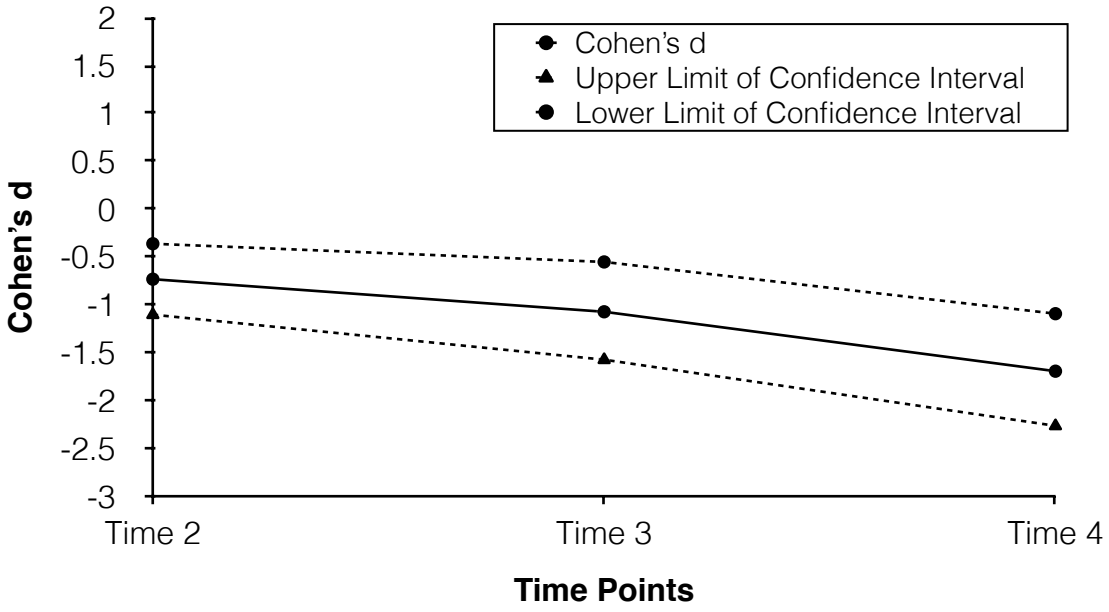


Figure 23. Change in the Cohen's d_{av} on the Interpersonal Relations sub-scale at week 4 (Time 2), week 7 (Time 3) and post-intervention (Time 4).

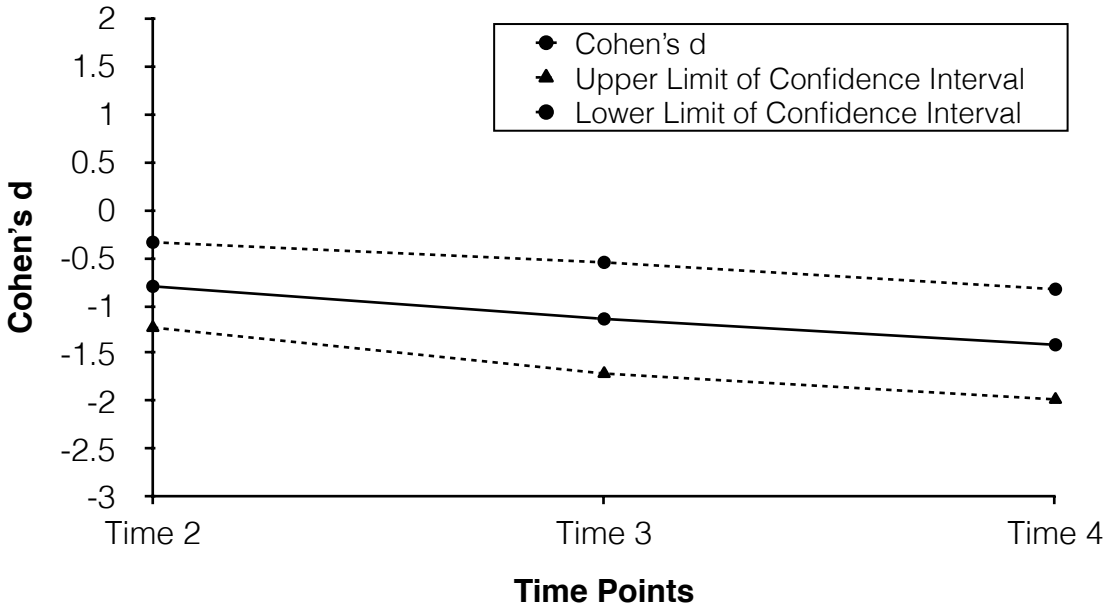


Figure 24. Change in the Cohen's d_{av} on the Behavioural Dysfunction sub-scale at week 4 (Time 2), week 7 (Time 3) and post-intervention (Time 4).

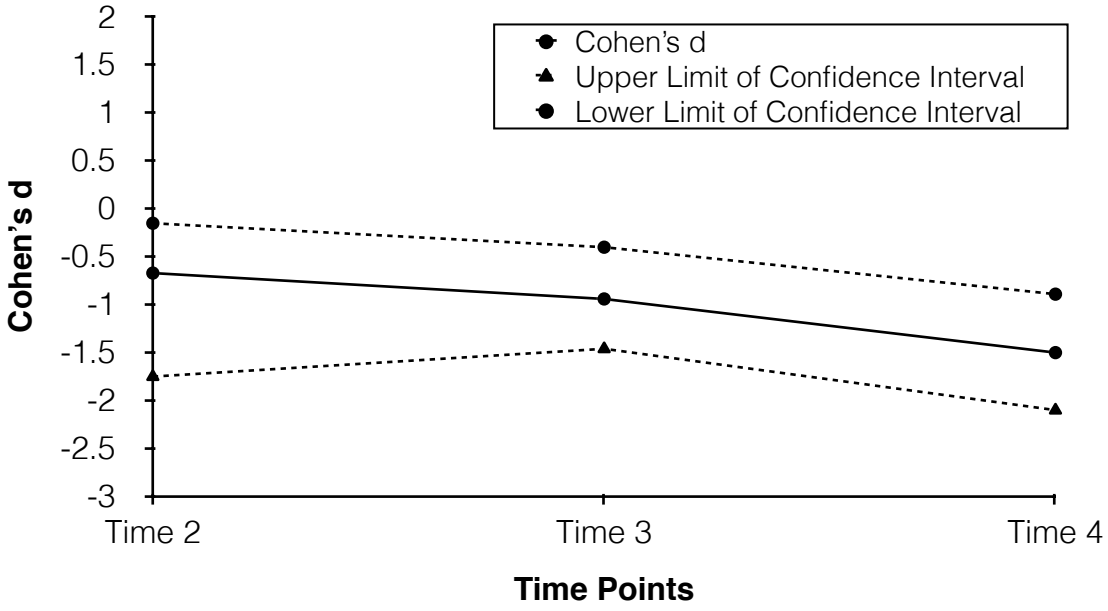


Figure 25. Change in the Cohen's d_{av} on the Social Problems sub-scale at week 4 (Time 2), week 7 (Time 3) and post-intervention (Time 4).

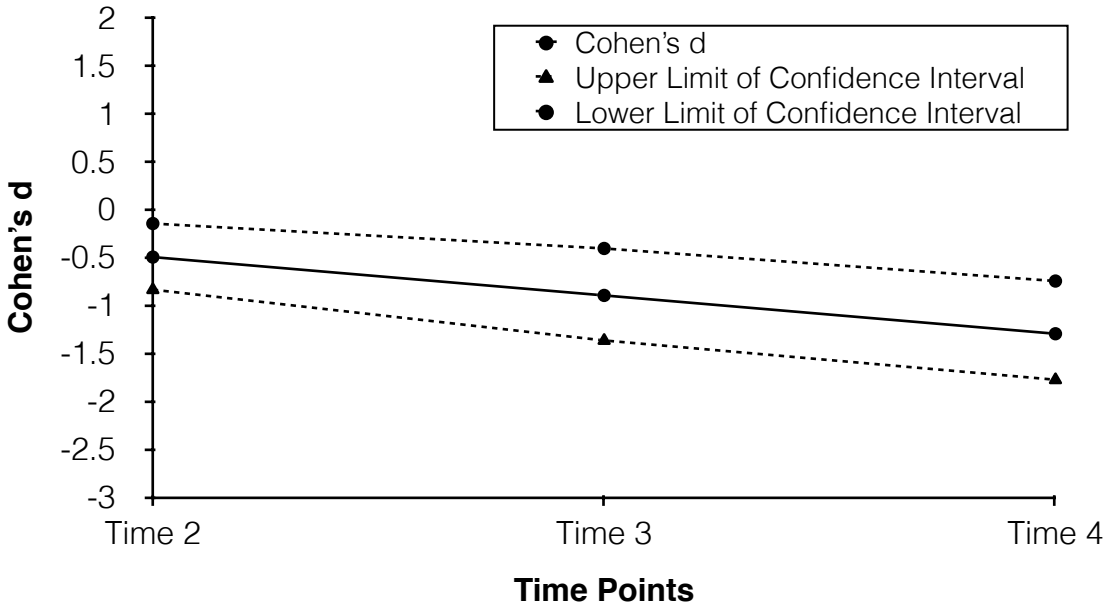


Figure 26. Change in the Cohen's d_{av} on the Critical Items sub-scale at week 4 (Time 2), week 7 (Time 3) and post-intervention (Time 4).

Chapter 7

Discussion

Introduction

The aim of this study was to evaluate the effectiveness of the Tai Wātea surf therapy programme in improving the psychosocial functioning of high-risk males between 16 and 24 residing within New Zealand. In this chapter, the results of the study will be discussed in light of the specific context and population, existing surf therapy research, and relevant AT and CB-AT literature. The implications of these findings will then be discussed in regard to community-based health care approaches with this population in general, and more broadly, surf therapy and CB-AT. The chapter will conclude with programme-specific recommendations, a discussion on the limitations of this study, and directions for future research.

Inter-correlation analysis of the Y-OQ-SR

Strong correlations between sub-scales were not unexpected for this population, due to the fact that high-risk young people generally present with complex issues that mutually reinforce each other. Firstly, the strong correlations between the Intrapersonal Distress, Somatic Complaints and Critical Items sub-scales was intuitive. Participants who reported high levels of anxiety and depression were often managing these states with drugs (e.g. marijuana, methamphetamine) and alcohol (Fang & McNeil, 2017; Futa et al., 2003), and it appeared that the long-term ineffectiveness of managing negative affective states in this manner resulted in a growing sense of hopelessness or “being stuck”. This subsequently increased the risk of suicidal thoughts and behaviours (Ehlers et al., 2019; Mersky et al., 2013). In addition, prolonged and heavy misuse of

substances did result in drug-induced psychosis in some participants (Dixon & Lehman, 2017). The combination of frequent drug and alcohol use, mental distress/illness, and self-harming behaviour appeared to subsequently produce low physical health and/or somatic issues (Haug et al., 2004; Herzog & Schmahl, 2018).

The correlation between the Interpersonal Relations, Social Problems and Behavioural Dysfunction sub-scales was also unsurprising, as low levels of impulse control, frustration tolerance, and emotional regulation have been reported as risk factors for delinquent behaviour (Mordre et al., 2011; Sibley et al., 2011; Walther et al., 2013). Furthermore, successful and fulfilling relationships are dependent on learning and practicing adequate social skills such as respect, conflict management, recognising social cues, regulation of emotion, taking responsibility, self-control, and showing empathy (Botvin & Griffin, 2015). As many participants have grown up in adverse home environments, where dysfunctional or harmful behaviours are most frequently modelled, such social skills were not readily learnt or practiced (Gresham, 2002; Murray, 2007). Thus, the ability to maintain positive relationships with significant others appeared to be impaired, and anti-social behaviour seemed to be the norm for most participants. These issues were exacerbated when a participant was using/misusing substances regularly (Fergusson et al., 2013).

Unfortunately, psychometric studies on the Y-OQ-SR have not included an inter-correlation analysis for its sub-scales. Other studies utilising the questionnaire have not submitted such an analysis either. Thus, these results cannot be compared with other findings. Although an inter-correlation analysis was conducted for the Y-OQ, this comparison is not sound, as caregiver- and self-report outcomes are often notably different, provided that youth are more

accurate in reporting internal difficulties (e.g. Intrapersonal Distress) and caregivers are more accurate in reporting problematic behaviour (e.g. Social Problems). That said, Burlingham et al. (2001) have previously reported much higher correlations (r = 0.70 or greater) between the Intrapersonal Distress, Interpersonal Relationships, Social Problems and Behavioural Dysfunction sub-scales and lower correlations between the Somatic and Critical Items sub-scales with the other sub-scales on the Y-OQ.

Hypothesis 1: Improved Overall Functioning

The Y-OQ-SR total score assesses an individual's overall psychosocial functioning, and is the most reliable and valid metric (Wells et al. 2003). Improving participants' overall psychosocial functioning is a foundational aim of LFM, as adequate psychosocial functioning is vital to maintaining a pro-social lifestyle and a sense of well-being (Hopkins et al., 2014; Weersing et al., 2017). The fact that all participants fell above the clinical cut-off line prior to the intervention, suggests that the recruitment process and programme design is efficacious in reaching the target population — a population that is typically very difficult to engage (Karver & Caporino, 2010). Research outcomes, as measured by the Y-OQ-SR total score were exceedingly positive. Firstly, the group mean reduced by almost 50 points between pre- and post-intervention and boasted a very large effect size, with most participants demonstrating statistically significant change. Secondly, considering the multifariousness and severity of challenges that participants presented with at baseline, and that participants continue to face adverse circumstances in their everyday life throughout their programme attendance, the fact that 3/4 of participants crossed the clinical cut-off line at post-intervention was remarkable. This provided further evidence that the

treatment effect was not likely due to measurement error (Jacobson & Truax, 1991). Furthermore, studies detailing benchmarks regarding psychosocial outcomes among youth (e.g. Warren, et al., 2010) have stated that deterioration rates in community mental health settings are estimated between 15% and 24%. In light of this, it is a noteworthy finding that no reliable deterioration on the Y-OQ-SR total score was found at post-intervention. In the context of the ongoing challenges and instability that many participants face, this is an outstanding outcome.

As the Y-OQ-SR is normed on youth up to age 18, residing outside New Zealand, it is important to observe group mean differences and similarities between this study's population and the populations on which the Y-OQ-SR was normed. At pre-intervention, participants in this study scored up to fifteen points above the group means presented by Wells et al. (2003) for their clinical populations (*N* = 743; Residential: 61.22; Outpatient: 67.07; Partial Hospital: 65.29). It is likely that the participants scored above the normed clinical samples because a large percentage of participants were justice- and gang-involved, potentially attaining much higher scores on the Social Problems sub-scale than other clinical populations. At post-intervention, the participants in this study scored four points less than the group mean for Wells et al.'s (2003) community population (*N* = 512; 34.21). Based on this, it appears that the current study's data seemed to align well with the Y-OQ-SR's normed data. This supported the reliability of the outcomes reported in this study.

The effect size for this intervention was larger than those reported for stand alone CBT interventions aimed at anxiety and depression (Klein et al., 2007; Labelle et al., 2015; Vallis et al., 2020), delinquency (Koehler et al., 2013), alcohol and substance abuse (Magill et al., 2019) and trauma (Bastien et al., 2020). It

also appeared to fall above the typical range of effect sizes found within AT meta-analyses (e.g. Bowen & Neill, 2013; Gillis et al. 2016 ; Fleischer et al. 2017) and individual studies (Bowen et al., 2016). However, it is not entirely sound to compare the effect size of the current study to effect sizes reported in studies involving much larger samples, as well as comparison groups, provided that this sample size was very small and that within-subjects designs have more statistical power than between-subjects designs (Lakens, 2013).

These findings might be more meaningfully discussed in light of other specific AT and CB-AT studies. For example, this study's effect size was just smaller than that reported by Tucker et al. (2013) for their CB-AT and CB-AT with counselling treatment group outcomes (d = 2.1; d = 2.3) within a population very similar to this one. Tucker et al.'s findings also suggested that a CB-AT intervention with an added counselling component produced a larger effect. It is believed that the large effect size found in the current study was also due to the counselling and practical mentorship components included in the Tai Wātea programme.

Participants in Vankenegan et al.'s (2019) CB-AT study did not report an effect size, and demonstrated a much smaller reduction in mean pre- to post-intervention scores on the Y-OQ-SR total score (5.5 points). However, as with this study, participants' mean scores were situated in the clinical range at baseline, and crossed the clinical cut off line at post-intervention. This might suggest that whether participants are scoring much higher than the clinical cut-off score, or just above it, CB-AT could be an effective approach for helping young people with mild or severe challenges to regain an adequate level of overall functioning.

Johnson et al. (2020) also reported a smaller mean reduction between pre-post Y-OQ-SR total scores (25.07 points), as well as smaller treatment effect size

(g = 0.83). Participant's mean scores on all sub-scales were also higher at discharge than this study's sample. This was surprising, given that their intervention lasted a month longer than Tai Wātea, and removed participants from their everyday stressful surroundings. This suggests that removing youth or young adults from their environments may not always be necessary in order to achieve desired outcomes. It was also insightful that although mean scores in Johnson et al.'s (2020) study remained somewhat stable over six months to one year, they did linger around and eventually crossed back over the clinical-cut off line at six months. This is expected with youth who have complex issues (Russell, 2003; Tucker et al., 2016). Due to the ongoing environmental and societal challenges that Tai Wātea graduates face, it is hypothesised that a similar trend may be observed within future studies investigating the long-term outcomes of the programme.

Findings were also aligned with other surf therapy research studies with similar populations. Unfortunately, no other surf therapy studies have utilised the Y-OQ-SR or Y-OQ to measure change and thus findings cannot be directly compared. However, improvements in psychosocial functioning were also reported by scholars utilising other questionnaires and research approaches, such as Morgan (2010), Matos et al. (2017), Gomes et al. (2020), and Devine-Wright and Godfrey (2020) in their samples of marginalised at-risk youth.

In summary, the ideographic and aggregate data indicated that the Tai Wātea surf therapy programme was highly effective in enhancing the psychosocial functioning of high-risk youth and young adults and thus, the intervention may be able to assist participants in avoiding the poor long-term outcomes associated with their population (Ball et al., 2016). It is posited that the promising outcomes found in this study can be understood in light of AT theory and its advantageous

therapeutic features, as well as surfing's restorative characteristics. The outcomes also provide further evidence regarding the utilisation of surf therapy interventions for enhancing the well-being and functioning of other vulnerable populations around the world, especially those who find it difficult to engage with 'talking therapies', such as CBT.

Hypothesis 2: Improved Physical Functioning

Young people with a history of early and chronic trauma can present with more somatic complaints than others (e.g. Herzog & Schmahl , 2018), as well as a weakened immune system (e.g. Shonkoff et al., 2012). Thus, the Tai Wātea programme seeks to improve the physical health and functioning of all participants. As the majority of participants presented with very low physical health at intake, it was somewhat surprising that only half scored within the clinical range at baseline for somatic issues. It was also surprising that very few participants demonstrated statistically significant improvement at the conclusion of the intervention. However, despite the lack of significant change on this sub-scale, gradual change in the group mean and the indices of effect did suggest that positive change was occurring for most participants. This is consequential: the absence of frequent physical and somatic problems is essential to every-day functioning, as such issues can greatly impact on a person's energy levels, resilience and ability to concentrate (Lin et al., 2020). Thus, even minor changes on this sub-scale are considered vital for improving the long-term outcomes of Tai Wātea graduates.

Both Vankanegan et al. (2019) and Johnson et al. (2020) reported smaller group mean reductions from pre- to post-intervention on the Somatic Complaints

sub-scale. As both studies reported a similar mean score at baseline, the smaller reductions do not seem to be due to other participants being in notably better physical shape at intake. The effect size reported for this sub-scale (d_{av} = 0.88) was also larger than that of Bowen and Neill's (2013) effect size for short-term 'physical outcomes' in their meta-analysis of AT programming (g = 0.31). Based on other studies' outcomes, then, the degree of improvement found on this sub-scale is considered positive.

No other studies have investigated the effects of surf therapy on somatic complaints, specifically. However, Fleishmann et al.'s (2011) participant did demonstrate a significant reduction in somatic pain at post-intervention. Given that improvements in physical fitness were reported by both Hignett et al. (2018) and Devine-Wright and Godfrey (2020), it is possible that an evaluation of physical functioning, with a focus on fitness, may have produced more significant pre-test to post-test results. As expressed also by Van Ewijk et al (2020), it is likely that, had the Tai Wātea programme endured for an extended period and included more surf sessions in a week, outcomes may have been more significant. Overall, the results indicated that adding an outdoor physical activity (such as surfing) to an intervention with high-risk young people may be of value to their physical functioning.

Hypothesis 3: Improved Intrapersonal Functioning

Adverse childhood experiences have been linked to an increased likelihood of intrapersonal distress in adolescence and adulthood (e.g. Gardner et al., 2019). Thus, it was not surprising that all participants scored within the clinical range on the Intrapersonal Distress sub-scale at baseline. Based on existing AT and surf therapy literature, it was correctly hypothesised that most participants

would significantly improve in their intrapersonal functioning following the intervention. In fact, this sub-scale boasted one of the largest treatment effect sizes.

The outcomes associated with this sub-scale have important practical consequences. Firstly, good intrapersonal functioning is essential for managing everyday tasks and maintaining stability in relationships, work, and study. Thus, even small improvements on this sub-scale can have considerable effects on participants' daily lives. Secondly, through attending the Tai Wātea programme, surfing may become a new tool through which participants/graduates can practice positive coping strategies in the future (Berto, 2014; Levin & Taylor, 2011; Taylor & Stanton, 2007), as opposed to using harmful and addictive substances (Logan-Greene et al., 2017; Maisto et al., 2000). Thirdly, as the Intrapersonal Distress sub-scale and Critical Items sub-scale were strongly correlated, it is assumed that improvements on this sub-scale would impacted on a number of critical issues that participants' were managing, such as psychosis (likely also mediated by a reduction in substance misuse) self-harming behaviour, and thoughts about suicide.

The results are certainly in line with the vast amount of surf therapy studies that have reported improved emotional well-being in at-risk youth (e.g. Matos et al., 2017; Godfrey et al., 2020; Gomes et al., 2020; Sarkisian et al., 2020) and significant decreases in symptoms of depression and PTSD in service members and veterans (Otis et al., 2020; Rogers et al., 2014; Walter et al., 2019). The results also aligned with a number of other AT (Bowen et al., 2016) and CB-AT programme evaluations reporting significant improvements in stress and coping (Koperski et al., 2015), trait-anxiety (Wolf & Mehl, 2011), psychological resilience, and self-esteem (Arahanga-Doyle, 2019). Johnson et al.'s (2020) sample of young

people also demonstrated significant improvements on this sub-scale of the Y-OQ-SR, although mean scores at post-intervention for their sample were still higher than the ones found in this study. On the other hand, Vankanegan et al. (2019) did not find significant pre-post improvements on this sub-scale.

Overall, results indicated that the Tai Wātea surf therapy programme was highly effective in improving the emotional functioning of participants. Outcomes further support the utilisation of surf therapy as a vehicle for assisting other vulnerable young men and women within New Zealand to manage their mental health, and to achieve greater emotional and psychological well-being.

Hypothesis 4: Improved Interpersonal Functioning

Youth who grow up in households with neglectful, violent, or absent caregivers may experience difficulty in establishing healthy relationships with others, developing a positive self-concept (e.g. Radak, 2016; Sedighimornani et al., 2020), and demonstrating adequate social skills (Gresham, 2002). Therefore, it was anticipated that most participants would present with low interpersonal functioning at baseline. As the Tai Wātea programme is strongly aligned with the group-based dynamics of CB-AT (i.e. the centrality of whānaungatanga and aroha; Forgan & Jones, 2002; Tucker, 2009) and surf therapy programming in general (Marshall et al., 2019; Marhall et al., 2020), it was also acurately hypothesised that participants would demonstrate significant improvement in this area of functioning at post-intervention. In fact, the Interpersonal Relations sub-scale showed the largest treatment effect (d_{av} = -1.7; CLES: 96%; RCI+%: 70), along with the Intrapersonal Distress sub-scale. It is the researcher's belief that this was due to the Tai Wātea programme's ability to meet participants' developmental need for love and belonging (Maslow et al., 1970) and relatedness

(Ryan & Deci, 2017). This is consequential, as good relationships with others can have immense impact on a person's mental health, self-worth and self-efficacy (Crandall et al., 2020; Sheeran et al., 2020; Stoyanov, 2017), which in turn, effect a person's capacity to pursue and attain a stable, healthy and pro-social lifestyle (Cuevas et al., 2017; Radak, 2016).

These findings were in line with that of Bowen and Neill's (2013) meta-analysis of AT interventions and its effects on interpersonal well-being and functioning (g = 0.41). Results also echoed that of other New Zealand studies reporting notable interpersonal developments through adventure-based programming (Arahanga-Doyle, 2019; Eggleston, 2000), and were aligned with Vankanegan et al.'s (2019) and Johnson et al.'s (2020) findings, who both reported significant improvements on the Interpersonal Relations sub-scale of the Y-OQ-SR. Researchers in the field of surf therapy have also frequently reported various relationship-centred developments within their samples of at-risk youth (e.g. Devine-Wright & Godfrey 2020; Gomes et al., 2020; Hignett, et al., 2018; Marshall et al., 2019; 2020; Matos et al., 2018). For example, as expressed by the veterans in Caddick et al.'s (2015a, 2015b) qualitative studies, the participants in this study also seemed to have a deep understanding of each other's 'unique type of suffering', which naturally fostered a keen sense of acceptance and camaraderie in the goup, as well as an authentic concern for each other. The current study's findings also seem to suggest that the positive relational experiences participants reported during the programme produced flow-on effects within their families and peer groups, improving relationships outside of Tai Wātea also. This process was also reported by Devine-Wright and Godfrey (2020) in their research concerning The Wave Project.

Overall, findings demonstrated the effectiveness of the Tai Wātea programme to improve the interpersonal functioning of its participants, and further supported the use of surf therapy with young men who are at-risk of social exclusion and marginalisation, and/or may be struggling with self-confidence and relating well with others.

Hypothesis 5: Improved Behavioural Functioning

Dysfunctional caregivers and environments increase the risk of malnutrition (anti- and post-natal) and toxic stress during critical windows of children's neurodevelopment (e.g. Nelson & Gabard-Durnam, 2020). This can negatively impact on a child's capacity for emotional regulation, impulse control, learning, memory, attention and concentration (e.g. Sheridan & McLaughlin, 2016). In light of this, it was unsurprising that most participants scored within the clinical range for behavioural dysfunction at pre-intervention. Provided that time management, being organised, staying focussed, impulse control, managing emotions and other such qualities are encouraged and rewarded within the Tai Wātea programme, it was anticipated that participants would improve significantly on this sub-scale. Evidently, only one third of participants met this expectation at post-intervention. However, the indices of effect showed that a large percentage of participants had already begun to show a substantial shift in the therapeutic direction by week four, and that the majority of participants had demonstrated some improvement in their behaviour at post-intervention.

The lack of clinically significant change on this sub-scale was expected. Behavioural dysfunction stemming from neurodevelopmental problems and prolonged substance misuse are unlikely to be markedly impacted in eight weeks. However, it is hypothesised that behavioural functioning may indeed

improve with ongoing skills training (Botvin & Griffin, 2015) and adjustments in diet, exercise, and substance use (Wu et al., 2016). There is also evidence that micro-nutrient treatments have been effective in reducing ADHD symptoms, including impulse control and emotional regulation (see Gordon et al., 2015; Rucklidge et al., 2018).

Unlike this study, Vankenegan et al. (2019) did not report statistically significant pre- to post-intervention changes on the Behavioural Dysfunction sub-scale in their sample. Johnson et al. (2020), however, did find significant changes on the Behavioural Dysfunction sub-scale, and again, mean scores were similar at baseline, but were higher at discharge in their sample. Surf therapy research outlining specific improvements in ADHD-type symptoms is scarce. The SDQ, utilised by Gomes et al. (2020), Snelling (2015) and Matos et al. (2018), includes a hyper-activity sub-scale, which measures similar issues (e.g. focus, concentration, impulse control, restless). Gomes et al. (2020) did not report the outcomes of individual sub-scales, and Snelling (2015) and Matos et al. (2018) found no significant pre- to post-intervention changes. Godfrey and colleagues (2015), however, reported that parents and referrers witnessed improved 'self-management' in participants who attended the Wave Project, although exactly what this entails is uncertain. It is believed that different outcomes in regards to this particular area of functioning may be largely due to differences in programme design and chief programme objectives.

Overall, outcomes on this sub-scale suggest that the Tai Wātea programme was effective in improving behavioural dysfunction in high-risk young men. However, statistically and clinically significant change will likely only be achieved with ongoing support and additional intervention tools. Depending on the structure and objectives of a given surf therapy programme, these findings

suggest that surf therapy could be an effective tool for improving behavioural dysfunction in youth and young adults.

Hypothesis 6: Reduction in Anti-social Behaviour

Research suggests that children who have been exposed to ACEs such as parental incarceration, parental drug-use, family violence, and unstable foster care are at an increased risk of entering the criminal justice system at a young age (e.g. Perez, et al., 2018; Villodas et al., 2016). A prominent part of LFM's mission is to reach such young people and to support them in pursuing a different path. Although 20 out of 27 participants reported justice involvement at intake, 25 out of 27 participants scored within the clinical range for Social Problems (anti-social behaviour) at baseline. The considerably large treatment effect size and the fact that almost half of the participants demonstrated statistically significant improvement on this sub-scale, indicated that the Tai Wātea programme was effective in their objective of re-directing high-risk youth. This is a remarkable achievement, and somewhat unexpected, given that outside of the programme, participants commonly associate with anti-social peers and family members. This outcome may have been due to various programme features, such as the utilisation of all Bandura's (1977) theorised pathways to building self-efficacy (e.g. Stone, 2018), the kinaesthetic metaphors available within the surfing component, which supported the process of retaining the learning objectives (Appendix G; Bacon, 1983), and the dual services of practical support (youth navigation) and emotional support (counselling; Tucker, et al., 2013).

Although only seven participants demonstrated clinically significant change, it is proposed that even minor shifts in the desired direction can be of great consequence to the person, their families and their community. For instance,

Table 3 suggested that the frequency with which participants used alcohol or other drugs decreased over the course of the programme. Research suggests that reducing alcohol and drug use can reduce incidences of impulsive crime (Bennett et al., 2008; Boden et al., 2013), domestic violence (Cafferky et al., 2018; Coomber et al., 2019; Connor et al., 2011; Leonard, 2005), relationship problems (Fergusson et al., 2013; Lai et al., 2019), and sexual aggression (Shorey et al., 2017; Swartout & White, 2010). Thus, the surpassing value of the Tai Wātea programme to both participants and their wider community is evident.

Based on the demographics of this sample, it is not entirely surprising that the Social Problems sub-scale was the only sub-scale on which the group mean did not fall below the clinical cut-off score by Time 4 (Figure 12). This was also the only sub-scale on which reliable deterioration was seen at Time 4. It is speculated that elevations in the participant's scores at Time 3 and Time 4 was not due to a gradual increase in anti-social behaviour, but was due to dishonesty regarding social functioning at baseline. This was understandable, as it is common to be fearful in reporting anti-social or illegal behaviour to a stranger.

A typical observation among Tai Wātea participants is that the programme showed them that "there is more to life than crime and drugs/alcohol". Despite this, 10 out of the 20 participants, who were justice-involved at intake, were re-arrested for various anti-social behaviours approximately six to 18 months after their respective graduation ceremonies. Unsurprisingly, gang affiliation was reported by 8/10 of these participants (O'Brien et al., 2013; Sweeten et al., 2013). Of course, it is tempting to measure the success of the programme based solely on its ability to reduce recidivism. However, the long-term impact of beginning to believe in a redemptive (Kazemian, 2007; Maruna, 2001) or pro-social self (Markus & Nurius 1986), and one's ability to successfully live a pro-social life

(Cuevas et al., 2017) is not to be underestimated (Maruna, 2001; Radak, 2016). Based on self-efficacy theory (Bandura, 1977), simply attending the Tai Wātea programme, seeing other graduates succeed in their pro-social goals, and knowing that the Tai Tautoko programme is always available for support, substantially increases the likelihood that graduates will make pro-social decisions, if not now, potentially in the future.

The treatment effect size achieved on this sub-scale is certainly in line with other AT research concerning delinquency (e.g. Wilson & Lipsey, 2000) and problem behaviour (Bowen & Neill, 2013). The results are also similar to those described by Gomes et al. (2020) and Matos et al. (2018), who both reported significant reductions in problem behaviour and significant increases in pro-social behaviour. In addition, based on the effect sizes reported for stand-alone motivational interviewing in the treatment delinquency and substance misuse (e.g. Lundahl et al., 2010; Sayegh et al., 2017), the study showed that employing this counselling method is more effective when used in conjunction with other interventions (Burke et al., 2003).

Overall, findings on this sub-scale support the effectiveness of the Tai Wātea programme's ability to reduce anti-social behaviour, including problematic substance use. These changes are posited to have major impacts on participants' families and their community, making the intervention exceedingly valuable. Findings provide preliminary evidence for the use of tailored surf therapy interventions with justice-involved men within New Zealand and internationally.

Hypothesis 7: Reduction in Critical Issues

Research suggests that experiencing many ACEs can make one more susceptible to developing clinical issues such as psychopathology (e.g. Zelazo, 2020) and suicidal ideation (e.g. Thompson et al., 2019) in later life. These issues can be exacerbated by frequent and prolonged substance misuse (e.g. Beam et al., 2002; Degenhardt et al., 2018). In light of this, the fact that most participants scored within the clinical range on the Critical Items sub-scale at baseline was aligned with expectations. Although the hypothesis was only somewhat supported by the data (RCI+%: 37%), the fact that almost 3/4 of participants demonstrated movement in the desired direction by Time 2 (week four) is perhaps Tai Wātea's greatest accomplishment. As Lakens (2013) has argued, even small effect sizes can have large consequences when examining acute areas of dysfunction whereby stabilisation may mean the difference between life or death. Indeed, a finer analysis of the Critical Items sub-scale did suggest that the Tai Wātea program was effective in reducing the frequency with which participants were reporting suicidal thoughts and self-harming behaviour (Tables 4 and 5). This was also verified by participants' graduation speeches (Appendix F). This finding affirms the immense value of the Tai Wātea programme within the community, as it serves a population most vulnerable to suicide in New Zealand.

Regarding both cases of reliable deterioration at Time 2 and Time 3, it is posited that the sensitive nature of the questions pertaining to this sub-scale may have caused participants to misrepresent the degree of their distress at baseline. However, given the adverse circumstances and situation that some participants had to navigate during the programme, reliable deterioration was possible.

Although individuals who present with critical issues such as paranoia, hallucinations, and delusions are not LFM's target population, the data suggested that these issues did present themselves in around 18% of participants. Of

course, LFM always liaised with Child and Adolescent Mental Health Services in order to provide the best care for these participants. Based on this finding, the outcomes on this sub-scale may indicated that the programme could serve as an effective early intervention strategy, preventing further deterioration, residential care, and even adverse outcomes associated with mental illness that is not successfully treated (i.e. homelessness and early death).

Outcomes on this sub-scale are in line with other studies and meta-analyses investigating the effects of AT on clinical issues (e.g. Bowen & Neill, 2013; Bryson et al., 2013), including those utilising the Y-OQ-SR (Johnson et al., 2020; Vankenegan et al., 2019). Despite there being several studies investigating the impact of surf therapy on mental health issues such as depression, anxiety and PTSD, there is currently no research outlining specific quantitative outcomes regarding symptoms of psychosis or suicidal thoughts and/or attempts. Thus, these findings provide new information regarding the effects of surf therapy on these particular issues.

In summary, outcomes on this sub-scale indicated that the Tai Wātea programme was highly effective in reducing the severity of clinical issues in participants, and findings may support the utilisation of surf therapy with this and other populations who are experiencing high levels of emotional and psychological distress.

Hypothesis 8: Gradual Change Over Time

Gradual change over the course of the intervention was clearly evident in the data (Table 6), indicating that the programme had a cumulative effect on participants. Repeated replication of this effect with each new programme intake provided further evidence that treatment effects were unlikely to be due to

measurement error or confounding effects (Kazdin, 2011; Riley-Tillman & Burns, 2009; Smith, 2012; Tate, et al., 2008).

Three insightful trends emerged from the data. Firstly, participant scores typically reduced the most between baseline and week four of the programme. This indicated that programme effects were expeditious, and thus, that the programme was highly effective and relevant to the population it seeks to serve. Secondly, it was observed that the group mean on the Y-OQ-SR total score dropped below the clinical cut-off point by week seven (Time 3) of the intervention. This suggested that the programme was effective in producing substantial change in participants' psychosocial functioning, even before the graduation ceremony and reward day — considered to be some of the most influential components of the programme. Thirdly, on the Intrapersonal Distress, Behavioural Dysfunction and Social Problems sub-scales, the RCI+% increased most substantially between week four and week seven. On the other hand, on the Somatic Complaints and Interpersonal Difficulties sub-scale, there was either no or only a small increase in the RCI+% between week four and week seven, and then a substantial increase between week seven and post-intervention. This trend may suggest that dysfunctional relationship patterns and the long-term physical effects of chronic stress and drug use typically take longer to change. This reinforces the importance of long-term care within this population, as well as the involvement of partners and family members where possible.

Gradual change in study participants' well-being and functioning have been documented in the broader sphere of AT research (e.g. Tucker, et al., 2013; Williams et al., 2018) and in one other surf therapy study, investigating a similar population (Gomes et al., 2020). As would be expected in this study also, Gomes

and colleagues (2020) found that their programme outcomes were significantly moderated by dosage (attendance) and engagement.

Overall, this study demonstrated that programme effects were expeditious, that improvement in overall and specific areas of functioning was cumulative, and that some sub-scales showed improvement at a faster rate than others. These findings suggest that the programme design and components are efficacious and that programme objectives are relevant to the population it intends to serve. Importantly, these results indicated that improvements in functioning observed within this study are unlikely to be due to confounding factors or measurements of error.

Study Implications

The results of this study suggested that the Tai Wātea surf therapy programme was effective in reaching, retaining and improving the physical, emotional, interpersonal, social, and behavioural functioning of high-risk males in New Zealand. Such outcomes have the potential to reduce the risk of poor long-term outcomes associated with this population (Clements-Nolle & Waddington 2019; Hopkins et al., 2014; Koni et al., 2019; Walters & Seymour, 2017), to impact community-level issues such as crime and suicide rates (Cavney & Friedman, 2018; Lawson-Te Aho, 2017), and to interrupt generational cycles of dysfunction (Woods-Jaeger et al., 2018). The implications associated with these findings are layered and manifold.

Fore-mostly, this was the first study to investigate the effects of a surf therapy programme within New Zealand. Therefore, the study provided new insight into the type of approaches and tools that may be effective for improving the psychosocial functioning of one of New Zealand's most vulnerable and hard-

to-reach populations. Provided that the programme appeared to boast a high retention rate (80%) as well as a large treatment effect size (d_{av} = 2.0) over the course of this one-year inquiry, it is proposed that a CB-AT intervention is a highly effective approach for connecting with and assisting high-risk youth in avoiding poor long-term outcomes. Certainly, the findings greatly support the use of tailored, multi-modal interventions for this highly complex population.

As this study included a high percentage of Māori and mixed Māori-European participants, this study also provided some insight concerning the type of programme elements that are attractive, relevant and helpful to high-risk Māori males. This may include learning how to surf, reconceptualising the sport as part of Polynesian culture and tradition (a number of participants expressed that they thought of surfing as a "white-man's sport"), increasing cultural efficacy, acknowledgement of the familial and spiritual aspects of well-being, frequent connection with places of ancestral significance, challenging negative dominant discourses around Māori masculinity, and the modelling of a positive indigenous identity.

Secondly, this was the first study to investigate the effects of surf therapy on a sample that is highly gang- and justice-involved, and only the second study to investigate the effects of surf therapy with a mostly indigenous or mixed-indigenous sample (see Morgan, 2010). Therefore, it provided new understanding regarding the 'type of person' that surf therapy may be beneficial for (Benninger et al., 2020). This study also further supported the use of surf therapy interventions with vulnerable populations who are not comfortable with or do not typically respond well to more traditional 'talking therapies'.

Thirdly, it is the researcher's hope that this thesis has demonstrated how the budding intervention of surf therapy may fall under the umbrella of AT (Gomes,

2020), specifically CB-AT, and how AT literature can contribute to researchers' and practitioners' understanding in regards to participant outcomes and mechanisms of change. Additionally, along with previously discussed therapeutic elements inherent in surf therapy, such as flow, mastery, interpersonal connections, and the 'blue care' effect, this thesis also proposed new therapeutic features that may be applicable to other high-risk indigenous populations. This included positive risk-taking, spiritual well-being that is rooted in place and culture, and re-connection with an ancient Polynesian leisure activity that empowers youth to reclaim a positive indigenous identity, as well as their rightful place in the surf.

Furthermore, given that the Tai Wātea programme is one of the more intensive surf therapy programmes around the world, and includes distinctive programme components and features that closely adhere to those of AT, it is possible that the study may be a valid example of CB-AT, and may thus contribute to the growing literature concerning the effectiveness of CB-AT programmes for young people with various difficulties.

Lastly, this is the first study to utilise mBps in order to display individual and group-based outcomes within surf therapy research. Through this study, the reader can perceive how no-effect or reliable deterioration could easily have been hidden when only presenting aggregate data. It is also perceptible that outcomes may have been presented as "better" or "worse" based on a solely ideographic or solely group-based approach. For example, looking only at the ideographic data, one might think that the majority of participants did not show statistically significant improvement on 4/6 sub-scales, and therefore, the programme was not very effective. Alternatively, when looking only at group-based data, one might say that that the programme was highly effective, given that 5/6 sub-scales

demonstrated statistically significant, large treatment effects. The dual analyses and transparent presentation of outcomes, made possible with mBps, clearly complement each other and provide a more complete picture of intervention effects. It is the researcher's hope that the study was able to demonstrate the value of using such a data analysis approach, especially when conducting research within populations that are hard to reach and retain, and may therefore result in a small sample size.

Programme-specific Recommendations

Although a substantial amount of growth takes place within the Tai Wātea programme, it is by no means complete. As this population of young people are entrenched in generational cycles of dysfunction (e.g. Pihama et al., 2014) — a problem often rooted in much larger socio-political issues — it is to be expected that changing maladaptive beliefs and behaviours will take time and that visible growth and development will be sporadic (Maruna, 2001; Radak, 2016). In light of this, three recommendations must be made regarding the programme its-self:

Firstly, based on the relentless environmental pressures and challenges that graduates face (e.g. gang-involvement, poverty, household dysfunction), it is recommended that on-going one-on-one support be provided for graduates of the programme, in the form of personal mentorship, and or counselling which utilises a motivational interviewing (Anstiss et al., 2011; Austin et al., 2011) and/or CBT approach (Bennett et al., 2014; Konanur et al., 2015; Lambie & Gluckman, 2018; Magill et al., 2019).

Secondly, based on findings concerning the potential of educational and vocational training programmes to reduce recidivism (MacKenzie & Farrington, 2015; Wilson et al., 2001), it is recommended that strengths-based assessments,

academic, employment and job skills development, job placement assistance, and assistance with job retention (Schaeffer et al., 2014) be made a priority for graduates of the programme (Visher et al, 2005), perhaps even incorporated into the Tai Tautoko programme.

Lastly, based on the fact that some participants struggled to attend the programme because of transience/homelessness, and that other participants faced extremely household dysfunction that impacted on their ability to attend the programme and/or improve in their functioning, it is recommended that a temporary LFM residence be made available for such participants for the duration of the eight-week programme. It is posited that these three adaptations would make a marked impact on the lives of future participants of the programme.

Study Limitations

Findings should be interpreted with an awareness of the limitations related to this study. Regarding the design, there were four main limitations. Firstly, in single-group research designs, sound research practice requires a minimum of three data points for the baseline phase (Smith, 2012; Vannest & Ninci, 2015). However, due to the chaotic lifestyles of participants, this was not always possible. Twenty-three out of 27 participants provided two baselines data points, and only eleven participants provided three baseline data points. This means that a pre-intervention pattern of functioning could not be reliably determined for a large percentage of participants. Secondly, the absence of a control group and randomisation means that a causal relationship between programme attendance and psychosocial improvements cannot be determined. The placebo effect, confounding factors, or the simple passing of time cannot be excluded as

alternative explanations. Thirdly, as this study only addresses the effectiveness of this particular programme, generalisability is very limited. Lastly, as the Tai Wātea programme is made up of many components, albeit with surfing at its centre, the researcher is unable to determine the contribution of each component to the improvement of the participants, including that of surfing (Benninger et al., 2020).

The utilisation of the Y-OQ-SR instrument posed another set of limitations. Firstly, although it was considered suitable to use within this study, the Y-OQ-SR questionnaire was normed on samples outside of New Zealand and included youth aged up to age 18 only. Secondly, the Y-OQ-SR should ideally be supplemented with the Y-OQ (caregiver or other report). Utilising both measures allow for more robust data and an additional perspective. However, not all participants lived with caregivers, some participants drifted between family and friends, and some resided in tents and homeless shelters. Additionally, the questionnaire assumes that the caregiver themselves are stable and are reasonably aware of the problems facing the person in treatment, and unfortunately this is not always the case. It was also not considered to be appropriate for LFM staff to fill in Y-OQ questionnaires, as the data would assuredly be subjected to bias. Adding to this, few participants had 'involved' parole officers and none had social workers or tutors who could complete the Y-OQ. Thirdly, response bias is a particular issue with self-reporting participant surveys. The most relevant was desirability bias, recall bias, and demand characteristics. The fact that the evaluation questionnaire was administered by someone who was external to LFM may have somewhat reduced the presence of the former and the latter response bias.

The two participants that demonstrated no improvement by Time 4, and the few participants that showed signs of reliable deterioration at Time 2 and Time 3

of the intervention demonstrated three further study limitations. Firstly, dishonesty at baseline presented a major challenge to the reliability of the outcomes. For example, one of the participants that showed no improvement at Time 4 had in fact received the highest achievement award at graduation (the patu) and is now employed with LFM as a youth mentor. The major discrepancy between the quantitative and qualitative data concerning this participant was later revealed to be due to distrust of the researcher and thus, dishonesty at baseline. It was evident with other participants too, that gradual trust in the researcher, and thus, progressive honesty throughout the data collection interviews seemed to translate to 'no change', or even 'deterioration' at certain time-points. Secondly, having only quantitative and self-report data can obscure the true impact of an intervention on certain individuals. For example, the other participant who demonstrated no change at Time 4, was hospitalised in week 6 of his respective programme for mood disturbances as well as episodes of psychosis after the traumatic loss of a family member. Although the data suggested that the programme made no reliable effect on this participant, the participant's family had disclosed to LFM staff that the programme had kept him 'stable' at a critical time in his life. In light of this, "no change" was a positive outcome for this individual, as without the intervention, he may have deteriorated even further. Thirdly, and surprisingly, increased self-awareness and growth posed another major challenge to the reliability of some outcomes. For example, at baseline, some participants indicated that they were happy, enjoying their relationships, or felt in control of their emotions — resulting in low scores on these items at baseline. However, as the programme progressed, participants started to reflect

on some of these topics more honestly, or to define personal happiness and healthy relationships in alternative ways. Consequently, an increase in self-awareness and personal growth seemed to translate to 'no change', or even deterioration at certain time points. These outcomes were proudly included in the results, as they provide valuable insights to other researchers in regards to the challenges of collecting reliable data with high-risk populations.

Future Research

Although this study made an important and valuable contribution to community mental health research within New Zealand and to surf therapy research as a whole, there are many questions and issues that this study could not address. Regarding the Tai Wātea programme itself, longitudinal data are needed to determine the sustainability of outcomes over time. However, an accurate evaluation of the long-term outcomes of this programme would be very difficult to achieve, as change is non-linear. Therefore, longitudinal research may instead need to focus on how graduates create and sustain environments that promote their wellbeing and psychosocial functioning, as well as potential socio-ecological barriers to achieving this (N. Blampied, private communication, March 28). In addition, a qualitative inquiry may assist in further exploring the effects and mechanisms of change associated with the programme. The latter would be vital in the formation of a programme theory, which this study was unable to explore. Regrettably, this study was also unable to comment on how this programme impacted on the spiritual and/or cultural well-being of participants, despite the Tai Wātea programme placing a unique emphasis on this in comparison to other surf therapy programmes. Cultural and spiritual health are two of the main "walls" that support indigenous well-being (Durie, 1982; Durie, 2005), and thus, it is vital that

programmes provided within New Zealand consider and evaluate outcomes related to these areas (Valentine et al., 2017). Lastly, conducting an analysis on the factors that moderate outcomes, such as age or gang involvement, could assist in understanding the generalisability of research findings to subgroups of participants.

Concerning surf therapy research in general, future studies should aim to utilise randomisation as well as control groups in order to increase generalisability and reliability of findings (Benninger et al., 2020). In addition, assessment techniques, such as the exclusive use of self-report measures, must be improved in order to better substantiate future research (Walter et al., 2019). Furthermore, the study design was unable to determine how much of the change in overall functioning was due to surfing alone. Such an enquiry would be beneficial to the field of surf therapy, as it would assist in determining the effectiveness of surfing as a clinical tool, as opposed to determining the effectiveness of a specific programme (Benninger et al., 2020).

Conclusion

In conclusion, this study provided positive exploratory evidence that the Tai Wātea programme is effective in improving the psychosocial functioning of high-risk males between ages 16 and 24. The large programme effect sizes found on the Y-OQ-SR total score and five of the Y-OQ-SR sub-scales suggest that the programme is a promising intervention that is of great value to its participants (e.g. enhancing intrapersonal and physical functioning), their families (e.g. increasing relational and behavioural functioning), and their wider communities (e.g. decreasing anti-social behaviour problems and critical issues such as suicide and psychosis). The outcomes reported in this study should be of great

interest to community mental health practitioners, funders, and commissioners who desire to curb the adverse outcomes associated with this population and the social cost this incurs. The implications associated with these findings are significant for community-level problems (e.g. crime and suicide rates), community mental health approaches utilised within New Zealand for both Pākeha and Māori, the field of surf therapy, and the wider sphere of CB-AT. Unfortunately, due to study limitations, the reliability and generalisability of these findings are restricted. Future research should focus on developing the programme theory of the Tai Wātea programme, which could include a longitudinal enquiry and/or a qualitative enquiry. Future research in the field of surf therapy could include a centre on how this treatment approach may bolster spiritual and cultural well-being, and should generally focus on utilising more rigorous research designs that include control groups and randomisation. Research aimed at the development of a theoretical framework for surf therapy may also be beneficial to this fast-expanding field.

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Tai Wātea/Waves of Freedom:
An evaluation of a group-based surf therapy program for at-risk males.

PARTICIPANT INFORMATION SHEET

Kia Ora!

My name is Annericke Pretorius. I am undertaking this research project in order to complete a Masters degree in Psychology at Massey University. This is necessary in order to ultimately register as a psychologist. My passion is to work with rangatahi who are at-risk of negative life/health outcomes. I also have a keen interest in using outdoor activities (like surfing) to improve young people's mental health.

Project Description and Invitation

Live For More (LFM) is currently the first and only organisation within New Zealand to provide a structured group surf therapy programme. The purpose of this project is to evaluate the outcomes of the Tai Wātea Surf Therapy Programme in the lives of the men who are taking part in it. Demonstrating the value of this intervention through evaluation is important for service users (you), the community, whānau, and health professionals. All of these groups share an interest in the wellbeing of young males in New Zealand. I invite every participant in Tai Wātea to be a part of my research project entitled, "*Tai Wātea/Waves of Freedom: An evaluation of a group-based surf therapy program for at-risk males"*. You are eligible to participate if you are:

- Over 16 years old or over,
- Planning to enrol/already enrolled in the Tai Wātea surf programme.
- Committed to showing up for one-on-one and group session as well as data collection dates.

My aim is to have a minimum of 25 participants in this study between July 2018 and July 2019.

If you participate, what will you need to do?

You will be asked to complete a 64-question survey a total of six times before, during and after the Tai Wātea surf programme. This questionnaire (Youth Outcome Questionnaire) measures changes in personal well-being, relationships with whānau and friends, and behaviour. The questionnaire takes between 15-20 minutes to fill out. Participation in this study will thus take 2 hours of your time. The first week you participate, you will be asked a few demographic questions as well.

- *Before the programme:* You will fill in the same questionnaire once a week for as many as three weeks (you can start this week, any time after today). This will take place at the Live For More offices in a private room or over telephone at an agreed date and time. The questionnaire will first be administered in an interview style so that you can get familiar with it and I clarify any questions.

- *During the programme*: You will fill in the same questionnaire two more times during the programme (week 4 and week 7 of the programme). This will happen at the Live For More offices between the surf session and lunch time OR between lunch time and cultural work OR at the conclusion of the weekly group session OR after your one on one meeting with Krista during the week.

- After the programme: When the programme concludes, you will fill in the same questionnaire one more time the week after the programme has concluded, on Reward Day. This will take place any time during the end of the day, when you are ready to complete your last survey. If you are unable to attend, we can meet at the Live For More offices or talk over the phone in that same week.

If you participate, what are the benefits and risks?

On completion of the study, I will offer you a small koha, that is, a $25 Prezzy® card, as a token of my appreciation for your participation in the study. I will also offer you a summary of the research findings (if you are interested). The greatest benefit of participation, however, is likely to be the activity of self-reflection, and sharing your personal journey (in the form of data) for the benefit of future participants, the community, whānau, health practitioners and commissioners. This research will play an important role in understanding ways in which professionals can support the relational, emotional and mental health of young males like you. Tu meke!

I do not expect that participation has any psychological or spiritual risks. However, if any part of the questionnaire does cause you distress, you are encouraged to discuss this will Krista Davis (who will be your programme facilitator and counsellor) during your one-on-one sessions, for support. I will do my utmost best to ensure a professional, safe and comfortable environment. However, some questions may cause you embarrassment or discomfort. If this is the case, it is your right to decline to answer.

How will the data be managed?

Collected data will only be used for research purposes. Data will be stored in a password-protected computer that only I will have access to. My supervisor will securely and safely store both questionnaires and consent forms for a period of five years; after which they will be destroyed. At the conclusion of the research each participant will be provided with a summary of research findings if they are interested. A report of the project findings will also be written and submitted to the LFM organisation. The research will be written up as a Masters thesis, and may be written up for submission in a peer-reviewed journal.

Confidentiality is of utmost importance to this project. Confidentiality means that I will not share any information you share with me, with anyone else. Each participant will use a chosen pseudonym on the questionnaires for the remainder of the project, and only I will know the real identity connected to the responses on the surveys. This is so that real identities can not be linked to questionnaire responses by anyone else. The only circumstance in which I will break confidentiality, is when a participant has a high score on self-harm or suicidal thoughts or actions. If this is the case, it will only be disclosed to Krista Davis (your counsellor). This is to ensure that you receive as much support as possible. Under no circumstances will any participant's name or response on the questionnaire be shown to any other person or organisation for any other reason.

What are my rights, if I choose to participate in this research?

You are under no obligation to accept this invitation.
If you decide to participate, you have the right to:

- decline to answer any particular question;
- withdraw from the study in the first 3 weeks of data collection (baseline data collection);
- ask any questions about the study at any time during participation;
- provide information on the understanding that your name will not be used in the research.
- be given access to a summary of the project findings when it is concluded.

If you participate, what do you do if you have concerns about the research?

You are welcome to contact me or my supervisor if you have any questions or concerns about the project. Our contact details are as follows:

Annericke Pretorius: School of Psychology, Massey University. Phone: 0224310055; Email: annericke@me.com

Dr Tatiana Tairi: School of Psychology – Wellington Campus, Massey University. Phone: 04 9793606 Email: T.Tairi@massey.ac.nz

Nāku noa, nā,

Annericke Pretorius

Ehara taku toa, he takitahi, he toa takitini

(Success is not the work of one, but the work of many)

This project has been reviewed and approved by the Massey University Human Ethics Committee: Southern B, Application 18/29 If you have any concerns about the conduct of this research, please contact Dr Gerald Harrison (Acting Chair), Massey University Human Ethics Committee: Southern B, telephone 06 356 9099 x 83570, email humanethicsouthb@massey.ac.nz

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Tai Wātea/Waves of Freedom:
An evaluation of a group-based surf therapy program for at-risk males.

PARTICIPANT CONSENT FORM

I have read the Information Sheet and have had the details of the study explained to me.

My questions have been answered to my satisfaction, and I understand that I may ask further questions at any time.

I agree to participate in this study under the conditions set out in the Information Sheet.

I agree that a high score on actions or thoughts related to suicide or self harm may be disclosed to Krista Davis or another staff member. I understand that this is for my own safety and to ensure that I receive as much support as possible during the programme.

I understand that under no circumstances will my name or response on the questionnaire be disclosed to any other person or organisation for any other reason.

Signature: ..... **Date:** .....

Full Name - printed .....

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Tai Wātea/Waves of Freedom: ***An evaluation of a group-based surf therapy program for at-risk males.***

PARTICIPANT QUESTIONNAIRE SHEET

Demographic Information

Date of Birth:_____**(***DD/MM/YYYY)*

Ethnicity:_____

How old were you when you last went to school? _____

Have you ever spent time in prison/youth prison (not including holding cells)?
Please circle one:

Yes No

Current Legal Status
You can pick as many as applicable

- ○ No current legal involvement;
- ○ Awaiting a court sentence;
- ○ On a community work sentence;
- ○ On probation/supervision sentence;
- ○ On home detention or community detention;
- ○ Released from prison within the past 4 weeks.

Gang Affiliations:

- ○ I am not connected to any gang in particular
- ○ I am connected to a particular gang
- ○ I am prospecting for a particular gang
- ○ I am a member of a particular gang

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CONSENT FORM FOR INCLUSION OF GRADUATION SPEECH

I agree and consent to have my graduation speech included in the appendices of Annericke Pretorius' Masters thesis. I acknowledge that my graduation speech will be anonymous.

Declaration by Graduate:

I _____ [print full name]_____ hereby consent to take part in this interview.

Signature: _____ Date: _____

Appendix E:
Characteristics of Studies on Surf Therapy Included in Review

Authors	Participants	Organisation; Location	Structure	Components	Research Design	Measure
Armitano et al., (2015)	Youth cognitive and physical with challenges (N = 16; age 5-18)	Unspecified; US	Twice weekly; eight weeks	Surf instruction and practice	Single-group Pre-test Post Test Design;	Brockport Physical Fitness Test Manual
Caddick et al., (2015a)	Veterans with PTSD (N = 16; age 27- 60)	Veteran's surf charity; UK	Weekly surf events; residential programmes	Unspecified	Narrative Design	Semi-structured Interviews; Participant Observation Data
Caddick et al., (2015b)	Veterans with PTSD (N = 15; age 27- 60)	Veteran's surf charity; UK	Weekly surf events; residential programmes	Unspecified	Narrative Design	Semi-structured Interviews; Participant Observation Data
Cavanaugh & Rademacher (2014)	Youth with ASD (N = 11, age 10 - 16 years).	Learning Through Sun, Sand, and SURF Camp; US	Two days	Surf instruction and practice; Group activities; Family socials; Social skills curriculum	Single-group Pre-test Post-test Design; Case study	SURF skills checklist; The Social Skills Improvement System; Piers-Harris Children's Self-Concept Scale

Authors	Participants	Organisation; Location	Structure	Components	Research Design	Measure
Clapham et al., (2020)	Youth cognitive and physical with challenges (N = 71; age 5-18)	Unspecified; US	Twice weekly, eight weeks	Surf instruction and practice; Unstructured aquatic play	Pre-Post CaUSI-Comparative Design	The Brockport Physical Fitness Test Manual; Heart rate monitor; Activity monitors
Clapham et al., (2017)	Youth cognitive and physical with challenges (N = 65; age5-18)	Unspecified; US	Twice weekly, eight weeks	Surf instruction and practice; Unstructured aquatic play	Longitudinal Pre-Post CaUSI-Comparative Design	The Brockport Physical Fitness Test Manual; Heart rate monitor; Activity monitors
Crawford (2016)*	Veterans with PTSD (N = 95)	Operation Surf; US	Surf camp; six days	Surf instruction and practice; Communal meals; Graduation ceremony	Single-group Pre-test Post-test Follow-up Design	Post-traumatic checklist (PCL 5); Beck Depression Inventory II; General Self-Efficacy Scale. Patient Report; Chart Review

Authors	Participants	Organisation; Location	Structure	Components	Research Design	Measure
Fleischmann et al., (2011)	21 year old active duty service member suffering from physical and psychological health conditions	Surf Clinic (Naval Medical Center San Diego); US	Weekly; six months	Surf instruction and practice	Case Study Design	Patient Report; Chart Review
Devine-Wright & Godfrey (2020)	Youth at-risk of social exclusion; parents/carers; referrers; staff	The Wave Project; UK	Weekly; six weeks	Surf instruction and practice; Group processes; Peer mentoring and support; On-going Surf Club	Mixed Methods Three Phase Evaluation (2013-2017)	Positive Outlook sub-scale on Stirling Children's Wellbeing Scale ; The Wave Project pre- and post-intervention questionnaire; Focus groups; Interviews; Word Associations; Log books.

Authors	Participants	Organisation; Location	Structure	Components	Research Design	Measure
Godfrey et al., (2015)	Youth at-risk of social exclusion (N = 84 participants, aged 8 to 18); 52 parents and referrers	The Wave Project; UK	Weekly; six weeks	Surf instruction and practice; Group processes; Peer mentoring and support; On-going Surf Club	Single-group Pre-test Post-test Design	Validated items from: Stirling Children's Wellbeing Scale; Warwick-Edinburg Mental Wellbeing Scale; Rosenberg Self Esteem Scale; National Obesity Observatory; Waves of Change Client Perspective Outcome Form
Gomes et al., (2020)	At-risk youth (N = 69; age 7-17)	SURF.ART; Portugal	Weekly; three years	Surf instruction and practice; "Life project"; Crisis Support; Psycho-educational workshops; Parental Workshops; Contingency Behavioural System	Longitudinal Single-group Pre-test Post-test Design	Strengths and Difficulties Questionnaire

Authors	Participants	Organisation; Location	Structure	Components	Research Design	Measure
Harris (2015)*	Adults with trauma and addiction (n = unspecified; age: unspecified)	Unspecified; US	Residential Program; weekly surf	Skills group for cultivating emotional regulation strategies; Embodied mindfulness practice; Surf instruction and practice; One-on-one therapeutic engagement in the ocean during surf session; Process group following surf session	Phenomenological Study Design	Participant Observation
Hignett et al., (2018)	Youth excluded or at risk of exclusion from mainstream education (N = 58; Age 13-16)	Surf to Success; UK	Weekly; twelve weeks	Surf instruction and practice; Environmental Awareness Curriculum; Socio-emotional learning	Single-Group Pre-test Post-test Research Design	British Panel Household Survey (Youth Version); Inclusion of Nature in the Self Scale Parent-Child Interaction System; The Social and Emotional Aspects of Learning Survey; Physiological measures

Authors	Participants	Organisation; Location	Structure	Components	Research Design	Measure
Moore et al., (2018)	Parents of youth cognitive and physical with challenges (n=10)	Unspecified; US	Twice weekly, eight weeks	Surf instruction and practice; Progression through surf skills.	General Qualitative Research Design	Semi-structured Interviews
Morgan (2010)	Vulnerable (mostly indigenous) children (N = 8; age 8-13)	Sunset Surfers; AUS	Holiday Programme; Unspecified.	Surf instruction and practice; Graduation Ceremony	General Qualitative Research Design	Semi-structured Parent & Child Interviews; Focus Groups
Otis et al., (2020)	Active duty military members (N = 47).	Surf Clinic; Naval Medical Center San Diego; US	Weekly; eight weeks	Surf instruction and practice; Socialising	Single-group Longitudinal Design, involving repeated measures	Generalized Anxiety Disorder scale; The Positive and Negative Affect Schedule (PANAS); Patient Health Questionnaire (PHQ-4)

Authors	Participants	Organisation; Location	Structure	Components	Research Design	Measure
Parsons (2018)*	Young adults with ASD (N = 15; age 18-26)	Unknown, US	Weekly; six weeks	Surf instruction and practice; Group discussions; Social-cognitive tasks; Goal-setting and decision making skills practice	Mixed Methods Single-Group Pre-test Post-test Follow-up Design	World Health Organization Quality of Life Field Scale; Photo-voice
Rogers et al., (2014)	Veterans with PTSD & Depressive symptoms (N = 11)	Jimmy Miller Memorial Foundation; US	Weekly; five weeks	Surf instruction and practice; Intentional collaboration between civilian volunteers and veterans; Communal lunch; Group processing; Resiliency-themed modules; Graduation ceremony	Pretest–Posttest Cohort Design	PTSD Checklist-Military Version; Major Depression Inventory
Sarkisian et al., (2020)	Youth 'at-promise' (N= 152; age 6 to 19 years)	Jimmy Miller Memorial Foundation; US	One day	Surf instruction and practice; Themed discussion on the beach; Shared meal	Observational Single-group Pretest-Posttest Follow-up Design	Children's Hope Scale; Drawing Form

Authors	Participants	Organisation; Location	Structure	Components	Research Design	Measure
Snelling (2015)*	High-risk youth (N = 115; age 8-16)	Waves of Change; SA	Two to five days a week; one to two years	Surf instruction and practice; Psychosocial curriculum; 'Teachable Moments'; Shared meal	Experimental Randomised Control Trial; Program Evaluation	Children's Hope Scale; Strengths and Difficulties Questionnaire; The Social and Health Assessments Scales (SAHA); Interviews
Van Ewijk et al., (2020).	Youth cognitive and physical with challenges (N = 84; age 8-18)	The Surf Project; Netherlands	Weekly; six to nine weeks	Surf instruction and practice; Graduation BBQ with parents and volunteers; On-going Surf Club	Single-group Pre-test Post-test Follow-up Design	KIDSCREEN-27 Questionnaire; Qualitative Evaluation Questionnaire; Customized Surf Project Questionnaire.

Authors	Participants	Organisation; Location	Structure	Components	Research Design	Measure
Walter et al., (2019)	Active duty military members (N = 74)	Surf Clinic; Naval Medical Center San Diego; US	Weekly; six weeks	Surf instruction and practice; Socialising	Single-group Longitudinal Design, involving repeated measures.	Patient Health Questionnaire; Generalized Anxiety Disorder 7-Item Scale; PTSD Checklist for DSM-5; Positive and Negative Affect Schedule Insomnia Severity Index

* Thesis or Dissertation

Appendix G:
Weekly Learning Objectives and Related Surfing Metaphors

Week	Theme	Surf Analogy	Learning Objective
1	Introduction/ Whakaurunga	Surf lesson on land	• Guidelines and expectations of programme are made known • Participants enjoy themselves and want to come back the following week • Participants realise that engaging with this group will be good for them and it will help them • Participants understand that the programme is a pathway to more opportunities
2	Freedom/Wātea	Getting into the Water	• An understanding of what true freedom means (e.g. free from addiction, out of the justice system) • Knowledge of what true freedom looks like in their lives • Knowledge of what things/decisions in their lives take away their freedom • Knowledge of the steps to take towards real freedom

3	Connection/ Hononga	Sitting on the Board	• Understanding the power of connections/ relationships. • Understanding the power of one good or bad connection • An ability to discern between good and bad connections in their lives • A desire to make more good connections in their life • A consideration of cutting out bad connections in their lives • Knowledge that good connections in their lives lead to freedom
4	Potential/Pito mata	Paddling In	• Understanding of what potential means • Knowledge that everyone has potential • A desire to uncover and develop their potential
5	Purpose/Whai take	Catching the Wave	• Understanding what purpose is • Knowledge that everyone has a purpose in life, whether they have discovered this yet or not. • A desire to discover what their purpose is • A desire to work towards their purpose

6	Empowerment/ Whakamana	Popping Up	• Understanding of what it means to be empowered • Identification of what and who helps to empower them to live 'the good life', as they see it • Developing an internal locus of control: knowledge that they are in charge of their life/ decisions

7	Perseverance/ Manawanui	Standing on the Board	• An understanding of:
			  • what it means to persevere
			  • the importance of perseverance
			  • that perseverance is hard, but worth it
			  • How to persevere in life

8	Maintenance/ Whakaora	Riding the Wave	• A desire to keep riding 'the good wave' they have caught during the Tai Wātea program • Knowledge of what 'maintenance' looks like in their own lives • Knowledge of how to manage 'falling off the wave', (i.e. slipping up/ backsliding) • Belief that they can 'keep riding the waves' in life no matter what happens.

Graduation Speeches

Participant A (Intake One)

"Good evening ladies and gentlemen, a very warm welcome to Live for More, Tai Wātea Waves of Freedom. Today I feel very proud to stand here on stage in front of you all to share a few words and thoughts about my eight-weeks experience on the Tai Wātea Live for More programme.

I would also like to take this opportunity to acknowledge all the staff, tutors and volunteers of the Live for More Charitable Trust: Krista, Tamati, Yolanda, Aisha and Sean and all the rest. Thank you for everything and thank you for making this day possible and for always having faith in me, believing and encouraging me positively and pushing me to the most, best potential mentally, emotionally, physically and socially. You guys are amazing.

I now feel empowered, focussed and committed to making more good connections and choices in life, rather than bad ones. Connections and relationships make us who we are, and they will eventually define us. Before I became a part of the Tai Wātea Surf Programme I was convicted and serving six years in prison on two separate charges of aggravated robbery. I was 18 at that time and I realise now the big negative impact and disappointment effect this had on me. Not just me but also on my family, too. I had a lot of time to think and deal with the consequences of my actions and crimes, behind the big walls encaged within the bars. I prayed for forgiveness all the time; six long years gone to waste.

However June 2018, after my release I was given the awesome opportunity to become part of the Live For More 'rangatahi finding freedom' Tai Wātea course. I was instantly intrigued. I've always loved sports, health and fitness, being outdoors, in the bush, swimming and diving for kai moana. They come naturally for me.

But surfing for me was a first. I felt an instant rush and thrill floating on the board and feeling the connection with Tangaroa. It gave me a sense of freedom and a genuine feeling of peace and belonging. This was the beginning of my journey for freedom. Surfing was like a saviour.

Besides catching waves and learning new techniques and skills about surfing, Tai Wātea offered us rangatahi classroom time, where we gained various useful knowledge. We

learned the true meanings about words such as potential. I quote “potential is in all of us, having abilities and talents hidden within us”. However, if this potential is not realised and developed, there will be no momentum; we’ll waste our time and miss out on opportunities. Therefore, if us rangatahi cannot use our potential and paddle in, we indeed “miss the wave”. So I’ve learned from now on I will always use my potential, use opportunities, stay focussed, surround yourself with positive and supportive people and paddle hard.

Tai Wātea has changed my life, I am free enough to start a new life. A life of purpose, existence, empowerment possibilities, goals, support, perseverance, achievements, standing strong. Keep heading in the right direction to get towards success. Don’t give up, get back up and kia kaha. Kia ora.”

Participant B (Intake Two)

“Kia ora whānau, just a bit of a speech about me, myself and my journey to recovery. Before I started this course, I found it hard to imagine a good future for myself. I was smoking a lot of bad drugs and hanging out with a lot of bad people. I’ve been in and out of prison since I was 17 – I’m 21 now. I came out from prison in May of last year. If I hadn’t of jumped on this course and taken that first step to realise in myself I had a problem, I think my life would have just kept going down. I probably would have been back in jail right now, repeating that cycle of being in and out of jail throughout my life.

This course has helped me with heaps. I’ve got legal and stable income now. Live for More is supporting me to find full-time employment, which I have already succeeded in. They have helped me to complete a CV and booked me in for my restricted license, which is a work in progress.

What has stood out to me is how much support the Live for More team has given us. It’s hard to do things on your own, by yourself, because I’m not used to going in and booking appointments. Being in jail, your appointments come to you. Everything is sorted for you in jail and your case asks you what you want to do. When you come out of jail, it’s a bit of a shock. The support from Live for More is overwhelming. You don’t know us from a bar of soap, however they are willing to show us that they want to help us. It has blown me away how much you guys – Krista, Sean, Aisha – it blows me away how much you guys do for us. You go out of your way to come pick us up, take us to WINZ, take us surfing, feed us… big appetites!

All those courses in jail are good, but when you leave, there is no support out here. Once you're time's up, you're chucked out into the big bad world by yourself, unless you have a family that is there to support you. That's where Live for More comes in, they carry on from where you left off in jail. It means a lot.

Initially I chose to do this course because of all the boys. I wanted to hang out with the boys. But then I realised that I actually had a lot of things I needed to address and work on. I had drug addictions, negative thinking, I needed to find my self-worth. I didn't really believe in myself, that I could do the right thing. I can do the right thing now.

Now that I am aware of these things, I have addressed them and I have put things into place to help me. Live for More has shown me that they are here to help me, if I want to help myself. They aren't judgmental and I've learnt to trust them, just like I would trust my parents. Sort have become a bit of a family to me. They make you feel comfortable and then that's what helped me open up. I've learnt to talk about my issues, which has been a huge milestone for me because it's something I'm not used to. It's something I've been holding inside me for quite a while. I've never been able to open up to anyone, but on this course I was able to.

Surfing has really helped me. It clears my mind when I am out there, on the waves. It's just peaceful, calm. It's a good, positive rush instead of a negative one, which is what I was used to. Surfing gives me peace and has brought me stability. Surfing is a good healthy rush, better than drugs and crime.

Surfing has taught me that If I'm wiling to learn and try something new, like I did with surfing, then I can achieve and accomplish ANYTHING I put my mind to.

While I've been on this course, I have welcomed my son into this world. I am trying my hardest to show him a better path. He motivates me because I don't want my son to grow up and live a dysfunctional lifestyle like I had. I think I am breaking the cycle in my whānau.

Now after the past eight weeks on this programme, I can see clearly and a longer path forward. I can't see back and I haven't stepped back. I can see myself moving forward in life now, making progress. I now have a sense of direction.

I'd just like to thank you all for coming and supporting us today. It means a lot. Thank you."

Participant C (Intake Three)

Kia ora whanau! I'm really proud to be standing up here and speaking – it's a big deal for me. I've never done anything like this before. Before this course, I was in prison. I had started the previous Tai Wātea course, but reoffended and went back to prison for 3 months. I wasn't thinking straight when I was back in prison. I felt like I had no one there and no support. I was considering just carrying on down the negative path I was on. I felt like I had no hope. I was feeling really down and out in prison and I felt like a waste of space. I've had people put me down my whole life.

But then I got this letter from Live for More. When I got the letter from you guys, and the surfing photos from the course I had been on before prison, it brought up my wairua and reminded me I can still change and do good. After getting that letter, it gave me hope and it made me hold on. The support from Live for More kept me strong while I was inside. Knowing that there were people out there trying to help me, and that they saw potential in me... it gave me hope.

I finished my time and the very first thing I did was come to Live for More. Two hours after walking through the prison gates, I was having lunch at Live for More with all the whanau. My ride from prison picked me up and drove me there because the programme had already started and I wanted to continue on with where I had left off before going to prison.

The past eight weeks of Tai Wātea have been life changing for me. This programme has kept me on the right path and I know I would not be the man I am today without the support from Live for More. I was a lost boy before this course. I've never known my pepeha, who I am or where I come from because I was whanagai-ed out as a baby and I've never known my birth family. On this programme, I have learnt who I am today and it feels awesome. I've discovered and learnt that I am from up north.

Surfing has been wonderful, awesome, amazing and had a massive impact on me. Words can't even explain what it's like when I am out surfing and I catch those waves. I feel so free when I'm in the water. It is so relaxing because anything negative I'm feeling goes away in the water. I don't have to think about anything when I am out there. If you've had a rough morning, when you get out there in the water, all your sins are washed away.

If I hadn't attended this course, I know I would just be in and out of jail for drugs and other negative things and crime. I would have no hope and I would not know about all the potential I have. I felt like a waste of space before this course, but now I know that I'm a hardworking, caring, loving, humble guy who has SO much to live for.

There are so many positive reminders this course has given me. All the gears we get along the way – the hoodies and the hats – plus the surfing, the food, and all the encouragement we get about doing well and staying on the right track – it really helps. When I am struggling, I think back on these things and it reminds me of how far I have come and to never give up. I am able to hold my head up high and carry on.
My son's is a huge motivation for me and I want him to have a better upbringing than I had. I want him to always be safe and always have a home to go to. I am changing so my son won't have to experience the things that I did.
When I was in the holding cells after court, about to go to prison, Sean and Krista came to visit me. Krista told me a story about the donkey in the hole. She told me how the donkey had fallen in the hole and was stuck deep in it with no way to get out. People tried to cover him up with dirt and bury him alive, to put him out of his misery. They had given up on the donkey. But the donkey would not give up. Every time the people chucked dirt on top of him, he shook it off, and stepped on top of it. He little by little got higher and higher until he was able to get out of the hole and run free. This story taught me to never give up and that I can use any challenges in my life to rise up and get to where I want to be. I've had people try and put my down my whole life, but through this course, I have learned how to turn those challenges into resilience, strength and success.
LIVE FOR MORE!!

Participant D (Intake Four)

Kia ora whānau. In March of this year, I sadly lost my big brother to suicide. This was so devastating and it has affected me quite a bit, to the point where I tried to take my own life a couple times. I had never struggled before with hurting myself, but the pain of losing Sam has been overwhelming and I haven't known how to manage and deal with it. So I turned to drugs and alcohol, because I thought it would help take my pain away. But I knew it was only a good feeling for a short time and not actually helping me. It felt like I was stuck in a very dark place where no one could see me in the night time.
But then, I found the light…. which was Live for More. I knew a lot of the past boys who have done this course and graduated, so I had heard heaps about it. I hadn't taken any notice of it, but then I thought I would try something new and decided to give it a go myself.
This course has slowly opened me up and I don't feel so closed off now. I feel like this course has been the key that has unlocked and opened doors that had been closed in my

life. I feel like it has also helped me to be more open-minded too. I have felt really loved and cared for when I'm at Live for More. It's felt like I've had another family and they have encouraged me through all the times when I'm struggling and haven't wanted to come to course. It's a different environment at Live for More to where I have come from and where I was before. It's a really positive place and I always feel peaceful when I am there. This course has also provided new opportunities for me. I've always wanted to know the feeling of riding a wave, so I was keen to jump on a board and try it. Krista and Sean asked if I needed help, but I told them "Na, I've got this myself". The feeling of riding a wave feels like I'm getting pushed with the momentum and actually getting somewhere in life. Every time I come to course, even if I'm having a bad morning or if I had a bad day the day before, surfing takes everything off my shoulders and I feel good when I'm in the water. It clears my mind when I am out there surfing because it takes away my bad thoughts and emotions. Plus after surfing… The best thing on this course is coming back from the surf and having a good kai!! Pizzas and pies…

I am very thankful I am still alive and that my heart is still beating. I don't know what would have happened if I hadn't joined this course. I do believe Live for More has helped to save my life. I feel way better than before I started this course, but I am still on my journey and working through things. I know I will make it and I have learnt to never give up.

I would like to thank Krista, Sean, and the beautiful woman with her heart on the outside – Aisha. I also want to thank the two mentors, Jared and Brandon, especially Jared. I just want to call Jared up here …… I know I wouldn't be here tonight graduating if it wasn't for you Jared. Thank you……

Live for More Points

What	Points
Attending Tai Wātea days BONUS points: - Ready and on time for pick up (at agreed location) - Rainy day (if raining when we do pickups in morning)	2 1 2
Perfect Attendance: 1-1's AND Tai Wātea - Perfect attendance on Tai Wātea programme days - Perfect Attendance 1-1s	50 *25* *25*
Filling out your Tai Wātea Booklet each week and bringing into your 1-1 - Partial - Fully	 2 4
Warrior of the Day	2
Above and Beyond	1
Attending Korero 1-1's during Tai Wātea (Krista) BONUS points: - Getting into LFM office on your own (2 points each way)	2 4
Attending Navigator 1-1's during Tai Wātea (Sean) - WINZ, court, CV, etc. BONUS points: - Getting into LFM office on your own (2 points each way)	2 4
Graduating Tai Wātea	20
Saying a speech at graduation	30
Attending Tai Tautoko programme days	3
Referring a bro to Tai Wātea (he must sign up and attend first two weeks of Tai Wātea)	15
Attending another course you sign up to (EmployNZ, SA, etc.)	1/day
Finishing your CW hours: 0-49 hours left when you start with LFM 50-99 hours left when you start with LFM 100+ hours left when you start with LFM	 20 35 50
Finishing your probation sentence: < 6 months left when you start with LFM > 6 months left when you start with LFM	 20 40
Getting your license: - Leaners - Restricted - Full	 10 15 20
Completing a CV	5
Coming along to Tai Wātea graduations as a graduate	20

Sharing your journey with LFM: written, video, etc.	30
Speaking at a LFM event: graduation, presentation, etc.	30
Passing a drug test for a job	25
Completing LSV	30
Part-time work (20-29 hours/week) **must keep for 2 months before getting points*	20 (every 2 months)
Full-time work (30+ hours/week) **must keep for 2 months before getting points*	30 (every 2 months)
Negatives: Breaking any of the LFM expectations e.g. Smoking outside of smoko; not helping with wash up, etc.	-2, -5, -10, -15, -20, etc. (goes up each time you break same one)

Rewards

What	Points
Birth Certificate	10
18+ ID card **only if license un-available*	30
License: - Replace a lost license - Reinstate a license - Learners – *must be able to pass multiple practice tests* - Restricted	30
Tai Wātea gears: Hoodie	50
Tai Wātea gears: Hat	100
Tai Wātea gears: Long sleeve	150
YOUR OWN SURFBOARD!!	250*

* Other requirements for receiving your board once you hit 250 points:

- You have completed all your CW hours
- You have no active warrants
- You have no new legal charges within the past three months
- If you are still on a probation sentence, you must be on track with no concerns or breaches the past two months

Appendix I:
Data Collection Flow Chart